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MARCH 1962

SEMICENTENNIAL EDITION

SPECIAL COLLECTIONS

Announcements

For 1962-1963

Nashville, Tennessee

172.00
29.00
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BULLETIN

TENNESSEE AGRICULTURAL AND INDUSTRIAL STATE UNIVERSITY

The University Catalog is an agreement, subject to necessary changes, between the student and the institution, and is the most valuable source of information relating to the university and its programs. Every student is charged with the responsibility of acquainting himself with the information the catalog contains. He should follow it carefully as a guide throughout his university career. Also, the student is expected to acquaint himself with the regulations contained in the University Student Handbook.

ANNOUNCEMENTS

1962-1963

VOLUME XLIX

NUMBER 5

Published bimonthly by Tennessee Agricultural and Industrial State University,
3500 Centennial Boulevard, Nashville, Tennessee.

Entered as second class matter at the Post Office at Nashville, Tennessee

NASHVILLE, TENNESSEE

MARCH, 1962

The 1962-1963 University Calendar

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Fall Quarter 1962

September 10, Monday.....Faculty Meeting (10:00 a.m.)
September 10-16, Monday-Sunday.....Freshman Week
September 13, Thursday.....Registration for Freshmen and New Students;
Undergraduate and Graduate
September 14, Friday...Registration for Upper Classmen and Graduate Students
September 17, Monday.....Classes Begin at 8:00 a.m.
September 28, Friday.....Opening Convocation
October 25-26, Thursday-Friday.....Mid-Term Examination
November 22-24, Thursday-Saturday.....Thanksgiving Holidays
December 4-7, Tuesday-Friday.....Examinations, Fall Quarter

Winter Quarter 1962-1963

December 10, Monday.....Registration, Winter Quarter
December 11, Tuesday.....Classes Begin at 8 a.m.
December 19, Wednesday.....Christmas Recess Begins at 4 p.m.
January 3, Thursday.....Classes Begin at 8 a.m.
January 24-25, Thursday-Friday.....Mid-Term Examinations
March 1-2, Friday, Saturday, and
March 4-6, Monday-Wednesday (Noon).....Examinations, Winter Quarter
March 7-9, Thursday-Saturday.....Spring Recess

Spring Quarter 1963

March 11, Monday.....Registration, Spring Quarter
March 12, Tuesday.....Classes Begin at 8 a.m.
April 18-19, Thursday-Friday.....Mid-Term Examinations
May 22-25, Wednesday-Saturday.....Examinations, Spring Quarter
May 26, Sunday.....Baccalaureate
May 27, Monday.....Commencement

SUMMER QUARTER 1963

First Term

June 3, Monday.....Registration
June 4, Tuesday.....Classes Begin at 8 a.m.
July 5-6, Friday-Saturday.....Examinations, First Six Weeks

Second Term

July 8, Monday.....Registration
July 9, Tuesday.....Classes Begin at 8 a.m.
August 8-9, Thursday-Friday.....Examinations, Second Six Weeks
August 11, Sunday.....Baccalaureate-Commencement Exercises

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GRADUATE SCHOOL

Department of Administration, Curriculum, and Instruction
 Department of Agricultural Education
 Department of Animal Science
 Department of Art and Music Education
 Department of Biology
 Department of Business Education
 Department of Chemistry
 Department of English
 Department of Health and Physical Education
 Department of Modern Foreign Languages
 Department of Plant Science
 Department of Psychology
 Department of Science Education
 Department of Social Sciences—History
 Department of Speech and Drama

SCHOOL OF AGRICULTURE AND HOME ECONOMICS

Department of Agricultural Education
 Department of Animal Science
 Department of Home Economics
 Department of Plant Science

SCHOOL OF ARTS AND SCIENCES

Department of Biology
 Department of Chemistry
 Department of English
 Department of Modern Foreign Languages
 Department of Physics and Mathematics
 Department of Science Education
 Department of Social Sciences
 Department of Speech and Drama

SCHOOL OF EDUCATION

Department of Administration, Curriculum, and Instruction
 Department of Art and Music Education
 Department of Business Administration
 Department of Business Education
 Department of Health and Physical Education
 Department of Psychology

SCHOOL OF ENGINEERING

Department of Architectural Engineering
 Department of Civil Engineering
 Department of Electrical Engineering
 Department of Industrial Education
 Department of Mechanical Engineering

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(Reserve Officers' Training Corps)

DEPARTMENT OF FIELD SERVICES AND EXTENSION

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Tennessee Agricultural and Industrial State University is a member of and is accredited by the Southern Association of Colleges and Secondary Schools, The National Council for Accreditation of Teacher Education, and the Teachers College Association of Extension and Field Services. The institution is also a member of the American Association of Land-Grant Colleges and State Universities.

TABLE OF CONTENTS

	PAGE
Calendars	2
THE UNIVERSITY CALENDAR.....	3
Academic Organization of the University.....	4
Accreditation	4
Tennessee State Board of Education.....	8
Tennessee State Education Services.....	8
Administration, General Administrative Officers.....	9
Instructional Faculty	9
Extension Faculty	18
The University	18
Historical Statement	18
Purpose	19
The Campus	19
STUDENT PERSONNEL SERVICES.....	21
Counseling and Guidance	22
University Counselors	22
Freshman Week	22
Psycho-Educational Clinic	23
The Communications Clinic	23
The Student Handbook	23
Living Accommodations	23
Cafeteria	24
Student Health Service	24
Recreation	24
Student Organizations and Activities	24
Student Employment	27
National Honor Societies	27
Honors, Scholarships and Awards	27
Student Loan Program.....	28
Placement Bureau	28
The Bureau of Public Relations and Alumni Affairs.....	28
Traffic and Parking Regulations.....	29
General Information and Fees.....	29
ROOM RESERVATIONS	30
UNDERGRADUATE ADMISSION	30
Procedures	30
General Requirements	31
REGISTRATION	33
Class Loads	33
Class Admission and Attendance.....	34
Absences	35
Grading System	35
SCHOLARSHIP STANDARDS AND PROBATION.....	36
Course Examinations	37
Classification of Students	38
Withdrawal from the University.....	38
REQUIREMENTS FOR BACHELOR DEGREES.....	38

	PAGE
Provisions for Graduate and Professional Education for Tennessee Students	41
Information for Veterans	41
THE GRADUATE SCHOOL	43
General Description	43
Programs and Degrees Offered	44
Admissions	44
Advisement	46
Registration	47
Enrollment	47
Graduate Work in Absentia	48
Program of Study	48
Graduate Record Examination	49
Removal of Deficiencies	49
General Requirements for the Master's Degree	49
Admission to Candidacy	50
Scholarship Standards	50
Research and Thesis	52
Final Oral Examination	53
Description of the Graduate Programs	54
Area of Applied Sciences	54
Department of Animal Science	54
Department of Plant Science	56
Area of Education	57
Department of Administration, Curriculum and Instruction	57
Department of Art and Music Education	63
Department of Business Education	65
Department of Psychology	68
Department of Science Education	73
Area of Health and Physical Education	74
Area of the Humanities	79
Department of English	79
Department of Modern Foreign Languages	80
Department of Speech and Drama	81
Area of the Natural Sciences	84
Department of Biology	84
Department of Chemistry	86
Area of the Social Sciences	88
Department of Social Sciences	88
Area in Vocational Education	89
SCHOOL OF AGRICULTURE AND HOME ECONOMICS	91
Department of Agricultural Education	92
Department of Animal Science	94
Department of Plant Science	99
Department of Home Economics	102
SCHOOL OF ARTS AND SCIENCES	113
Department of Biology	118
Department of Chemistry	122
Department of English	125
Department of Modern Foreign Languages	128
Department of Physics and Mathematics	133

	PAGE
Department of Science Education	139
Department of Social Sciences	142
Department of Speech and Drama	160
SCHOOL OF EDUCATION	167
Department of Administration, Curriculum and Instruction	171
Department of Art and Music Education	180
Department of Business Administration	188
Department of Business Education	192
Department of Health and Physical Education	196
Department of Psychology	207
SCHOOL OF ENGINEERING	213
Department of Architectural Engineering	215
Department of Civil Engineering	217
Department of Electrical Engineering	220
Department of Mechanical Engineering	223
Department of Industrial Education	226
AGRICULTURAL AND HOME ECONOMICS EXTENSION	239
DEPARTMENT OF AIR SCIENCE	241
INDEX	251

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Juanita E. Horner, B.S., Tenn. A. and I. State College; M.A., University of Michigan. *Assistant Professor of English.*

Madelyn B. Houston, A.B., M.A., Tenn. A. and I. State University. *Instructor in Speech and Drama.*

Earline H. Hudson, A.B., Flora Stone Mather College; B.S. in L.S., M.S. in L.S., Western Reserve University. *Asst. Professor of Library Service.*

••On leave.

Robert J. Hudson, B.S., Tenn. A. and I. State College; M.A., Ph.D., New York University. *Associate Professor of English.*

Thomas H. Hughes, B.S., West Virginia State College; M.S., Cornell University. *Professor of Health and Physical Education.*

George Hull, Jr., B.S., Alcorn College; M.S., Tenn. A. and I. State College; Ph.D., Ohio State University. *Associate Professor of Biology and Coordinator of Graduate Studies and Research in the Natural Sciences.*

Sadie M. Hunter, B.S., Tenn. A. and I. State College; M.A., Columbia University. *Assistant Professor of Business Education.*

Harold D. Hunter, B.S., North Carolina College; M.S., Tenn. A. and I. State University. *Assistant Professor of Health and Physical Education.*

••Mildred S. Hurley, B.S., South Carolina A. and M. College; M.S., Indiana University. *Assistant Professor of Elementary Education.*

Darlene Lucille Hutson, B.A., Lane College; M.A., Teachers College, Columbia University. *Associate Professor of Elementary Education and Consultant on In-Service Teacher Education.*

Henry H. Hymes, B.A., Tenn. A. and I. State College; M.S., Syracuse University. *Associate Professor of Geography.*

Erna J. Jackson, B.S., M.A., Tenn. A. and I. State University. *Instructor in English.*

Kenny Jackson, A.B., Benedict College; M.A., DePaul University; Ph.D., University of Pennsylvania. *Associate Professor of English.*

Leon Q. Jackson, Registered Architect. B.S. in Architecture, Kansas State College; M.S., in Architecture, University of Oklahoma; P.E. *Professor and Head of the Department of Architectural Engineering.*

Mary L. Jackson, B.S., M.S., Tenn. A. and I. State College. *Assistant Professor of Business Education.*

William N. Jackson, B.S., Morehouse College; M.S., Atlanta University; Ph.D., Ohio State University. *Professor and Head of the Department of Science Education.*

Clarence H. C. James, B.S. in Mechanical Engineering, Howard University. *Associate Professor of Mechanical Engineering.*

Pauline Marable James, B.S., M.S., Tenn. A. and I. State University; R.N., R.N.A., Meharry Medical College. *Instructor in Psychology.*

Mary E. Johnson, A.B., Virginia State College; M.A., Michigan State University. *Instructor in French.*

Napoleon Johnson, B.S. in Civil Engineering, Howard University; M.S.E. in Civil Engineering, University of Michigan. *Professor and Dean of the School of Engineering.*

Rother R. Johnson, B.S., Virginia State College; M.S., Ph.D., Michigan State University. *Part-Time Instructor in Biology.*

Alma Dunn Jones, B.S., Tenn. A. and I. State College; M.A., Columbia University. *Professor of English and Chairman of the Freshman English and Composition.*

Clinton E. Jones, B.S., North Carolina A. and T. College; M.S., University of Michigan. *Professor of Applied Mathematics in Engineering.*

Cornelius Jones, A.B., M.A., Tenn. A. and I. State College. *Assistant Professor of Political Science.*

Grace C. Jones, A.B., Dillard University; M.A., University of Michigan. *Assistant Professor of Psychology.*

Hinton C. Jones, A.B., Morehouse College; M.A., Cornell University. *Assistant Professor of English and Chairman of Sophomore Literature.*

Troy Jones, B.S., M.S., Tenn. A. and I. State University. *Instructor in Speech and Drama.*

Bessie Fogle Kean, A.B., Kentucky State College; M.A., in Library Science, University of Michigan. *Professor of Library Service.*

Raymond H. Kemp, B.A., M.S., Duquesne University. *Professor of Education.*

Clyde J. Kincaide, B.S., M.S., Tenn. A. and I. State University. *Instructor in Health and Physical Education.*

••On leave.

••Kermit C. King, B.S., M.S., Kansas State Teachers College; Ed.D., University of California. *Professor of Education and Coordinator of Student Teaching.*

Mabel S. King, B.S., Hampton Institute; M.S., Tenn. A. and I. State University. *Instructor in Health and Physical Education.*

Velma S. King, B.S., Langston University; M.A., University of Iowa. *Assistant Professor of Education.*

Harry E. Lash, B.S., North Carolina A. and T. College; M.S., Tenn. A. and I. State College. *Assistant Professor of Industrial Education and Engineering Drawing.*

Eino K. Latvala, B.S. and M.S. in Mechanical Engineering, University of Minnesota. *Part-time Instructor in Mechanical Engineering.*

Clyde M. Leathers, B.S., Langston University; M.A., University of Colorado; M.P.H., University of Michigan; H.S.D., Indiana University. *Professor of Health and Physical Education and Head of the Department of Physical Education for Men.*

Mabel W. Leathers, A.B., M.A., University of Colorado. *Assistant Professor of Sociology.*

Nancy R. Ledet, A.B., M.S., Tennessee A. and I. State University. *Part-time Instructor in Mathematics.*

Audrey E. Lewis, B.S., M.S., University of Illinois. *Instructor in Health and Physical Education.*

Edward C. Lewis, B.Mus., West Virginia State College; Diploma, The Army Music School; M.S., University of Illinois; Ph.D., University of Wisconsin. *Professor and Head of the Department of Art and Music Education.*

Crawford B. Lindsay, A.B., Talladega College; M.A., University of Michigan; Ph.D., Cornell University. *Professor and Head of the Department of English.*

Shannon D. Little, B.S., LeMoyne College; B.S., M.S., Tenn. A. and I. State College. *Associate Professor of Health and Physical Education.*

Mary A. Love, B.S., M.S., Tenn. A. and I. State University. *Instructor in Mathematics.*

Theodore A. Love, A.B., Talladega College; M.A., University of Michigan; Ph.D., New York University. *Part-time Professor of Mathematics.*

Lloyd L. Lusk, A.B., Jarvis Christian College; M.S., Indiana University. *Associate Professor of Music.*

Edward E. McAdams, B.S., in Electrical Engineering, Texas Technical College. *Part-time Instructor in Electrical Engineering.*

Mark H. McCann, B.S., M.S., Tenn. A. and I. State College. *Assistant Professor of Economics.*

Lois C. McDougald, A.B., Livingston College; M.A., Indiana University. *Associate Professor of History.*

Ruth A. McDowell, B.S., Princess Ann College; M.Ed., Pennsylvania State College. *Assistant Professor of Home Economics Education.*

Cathryn B. McKinney, B.S., M.S., Tenn. A. and I. State University. *Instructor in Home Economics Education.*

Frederick J. D. McKinney, B.A., M.A., Ball State Teachers College; Ed.D., Indiana University. *Professor of Education and Registrar.*

Miriam L. McTeer, B.S., Bennett College; M.S., Ph.D., University of Wisconsin. *Professor of Foods and Nutrition.*

Charity M. Mance, B.A., Howard University; M.A., University of Michigan; Ph.D., New York University. *Professor of Education and Head of the Department of Administration, Curriculum and Instruction.*

Carl L. Manuel, B.S. in Electrical Engineering, North Carolina A. and T. College of Electrical Engineering. *Associate Professor of Electrical Engineering.*

Kendrick Marshall, B.S., M.S., Tenn. A. and I. State University. *Instructor in Social Sciences.*

Annie B. Martin, A.B., Kentucky State College; M.S., in Social Work University of Tennessee. *Assistant Professor of Social Administration.*

Isaac Miller, B.S., Livingstone College; Ph.D. *Part-time Professor of Chemistry.*

Katie Miller, A.B. Tougaloo College; M.S., Tenn. A. and I. State University. *Assistant Professor of English.*

••On leave.

Richard Allen Miller, B.S., North Carolina College; M.S. Tenn. A. and I. State University. *Instructor in Health and Physical Education.*

Tyree Jones Miller, B.S., Howard University; M.S., Kansas City University. *Instructor in English.*

James L. Morris, B.A., M.Ed., Ph.D., University of Pittsburgh. *Professor of Education.*

Essie L. Mott, B.S., Tenn. A. and I. State College; M.S., Columbia University. *Instructor in Business Education.*

Joe T. Myers, B.S. Louisiana State University; M.A., University of Arkansas; Ph.D., Vanderbilt University. *Part-time Professor of German.*

Roland Norman, B.S., M.S., Ph.D., Cornell University. *Associate Professor and Head of the Department of Animal Science.*

Virginia S. Nyabongo, B.A., Bennett College; M.A., Ph.D., University of Wisconsin; Certificat d'Etudes Francaises Diplome d'Etudes Superieures de Phonetique, University of Grenoble, France. *Professor of French.*

Alicia M. O'Reilly, A.B., Tougaloo College; M.B.A., Atlanta University. *Asst. Professor of Business Administration.*

Frank B. Orndorff, B.S., M.S., Tenn. A. and I. State University. *Instructor in Mathematics.*

James A. Parsons, Registered Metallurgical Engineer; E. E., Rensselaer Polytechnic Institute; D.Sc. Wilberforce University. *Professor of Metallurgical Engineering.*

Rachel J. Patillo, A.B., M.S., Tenn. A. and I. State College. *Associate Professor of Sociology and Adviser to Veterans.*

Gretchen B. Payne, A.B., University of Denver; M.A., University of Colorado. *Instructor in Education.*

Joseph A. Payne, A.B., Kentucky State College; M.S., Ed.D., Indiana University. *Professor of Education and Dean of Students.*

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Lee H. Pennington, B.A., Fisk University; M.S., University of Minnesota. *Asst. Professor of Mathematics.*

Sarah M. Pereira, A.B., Ohio State University; M.A., Western Reserve University; Ph.D., Ohio State University. *Professor of Romance Languages.*

Harold L. Phelps, B.S., M.S., Tenn. A. and I. State University. *Assistant Professor of Psychology.*

Sara Wesley Phillips, B.A., Fisk University; M.A., University of Nebraska. *Instructor in Music.*

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Ruth M. Powell, A.B., Johnson C. Smith University; M.S., Tenn. A. and I. State University. *Instructor in Education.*

Albert J. Price, B.S., Morehouse College. Captain, U.S. Air Force. *Assistant Professor of Air Science.*

Evelyn S. Quivers, A.B., Spelman College; M.S. in L.S., Atlanta University. *Instructor in Library Sciences.*

Joseph James Ray, B.D., B.A., Yale University; M.A., Ph.D., George Peabody College. *Instructor in Psychology.*

Lillie B. Redmond, B.S., M.S., Tenn. A. and I. State College. *Assistant Professor of Home Economics Education.*

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S. Oliver Roberts, A.B. A.M., Brown University; Ph.D., University of Minnesota. *Part-time Professor of Psychology.*

Camille D. Robinson, B.S., M.S., Tenn. A. and I. State University. *Instructor in Business Education.*

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versity of Indiana; Ed.D., University of California. *Part-time Professor of Education.*

Nora L. Roy, A.B. Ohio State University; M.A., Tenn. A. and I. State College. *Assistant Professor of Sociology and Social Administration.*

Cecil M. Ryan, B.S., Langston University; C.F.I. United States Department of Commerce; M.S. Tenn. A. and I. State College. *Assistant Professor of Aviation Education.*

Dorothy I. J. Samuel, B.S., Virginia Union University; M.A., Atlanta University. *Associate Professor of French.*

Annie G. H. Sasser, B.S., Shaw University; M.S., Prairie View College. *Associate Professor of Mathematics; Associate Dean of Students; and Director of Placement Bureau.*

Earl L. Sasser, B.S., Shaw University; M.A., Ph.D., Cornell University. *Professor of English and Coordinator of Graduate Studies and Research in the Humanities.*

Horace C. Savage B.S., M.A., New York University. *Assistant Professor of History.*

Granville M. Sawyer, A.B., Tenn. A. and I. State College; M.A., Ph.D., University of Southern California. *Professor of Communications, and Director of Public Relations and Coordinator of Alumni Affairs.*

Maxine Y. Sawyer, A.B., Huston-Tillotson College; M.A., Tennessee A. and I. State University. *Instructor in English.*

Louis Howard Schuster, B.S., M.B.A., Ph.D., Ohio State University. *Professor of Business Administration and Director of the Division of Business.*

Mingo Scott, B.S., M.S., Tenn. A. and I. State College. *Asst. Professor in History.*

Nettie H. Seabrooks, B.S., Marygrove College; A.M.L.S., University of Michigan. *Instructor in Library Science.*

Rupert G. Seals, B.S., Florida A. and M. University; M.S. University of Kentucky; Ph.D., State College of Washington. *Associate Professor of Animal Science.*

••Gilbert W. Senter, B.S., M.S., Tenn. A. and I. State College. *Associate Professor of Chemistry.*

Solomon N. Shannon, A.B., Mississippi Industrial College; M.A., Fisk University; M.A., Columbia University; Ph.D. North Carolina State College. *Associate Professor of Secondary Education.*

John H. Sharpe, B.Mus., Howard University; M.Mus., Union Theological Seminary. *Professor of Music and University Organist.*

Doris E. Simmons, B.S., M.S., Tenn. A. and I. State University. *Assistant Professor of Chemistry.*

William J. Simmons, A.B., Lincoln University (Pa.); B.D., Union Theological Seminary; M.A., Columbia University; D.D., Monrovia College, Liberia, West Africa. *Professor of Philosophy.*

Alice C. Smith, A.B., Tougaloo College; M.S., Tennessee A. and I. State University. *Instructor in Science Education.*

Edward L. Smith, B.S., Tennessee A. and I. State University; M.M. University of Michigan. *Instructor in Music.*

Frederick D. Smith, B.S., Prairie View State College; M.S., D.V.M., Michigan State College. *Professor of Animal Science and Veterinarian.*

Jessie C. Smith, B.S., North Carolina A. and T. College; M. A., Michigan State University; M.A., George Peabody College. *Instructor in Library Service.*

William O. Smith B.S., M.A., New York University; Ph.D., State University of Iowa. *Associate Professor of Music.*

Major F. Spaulding, B.S.A., North Carolina A. and T. College; B.S., M.S., Cornell University; Ph.D., Massachusetts State College. *Professor of Plant Science and Dean of the School of Agriculture and Home Economics.*

Alonzo T. Stephens, A.B., Florida A. and M. University; M.Litt., Ph.D., University of Pittsburgh. *Professor of History and Coordinator of the Curriculum in History.*

Dorothy A. Stephens, A.B., B.S.L.S., North Carolina College; M.A., New York University. *Asst. Professor of Social Sciences.*

••On leave.

Preston E. Stewart, B.S., South Carolina State College; M.S., Tenn. A. and I. State College. *Associate Professor of Industrial Education.*

William D. Stinson, B.S., Tenn. A. and I. State College; M.A., New York University. *Assistant Professor in Business Education.*

H. A. Taylor, B.S., Morgan State College; M.S., Indiana University. *Instructor in Health and Physical Education.*

Henry L. Taylor, B.S., M.S., Tenn. A. and I. State College; Ph.D., Cornell University. *Professor and Head of the Department of Agricultural Education, and Coordinator of Graduate Studies and Research in Vocational Education.*

Wilhelmena R. Taylor, B.S., Hampton Institute; M.A., New York University. *Assistant Professor of Music.*

Cass F. L. Teague, B.S., M.S., Tenn. A. and I. State College. *Assistant Professor of Business Administration.*

Helen N. Teague, B.S., Kentucky State College; M.S., Indiana University. *Assistant Professor of Secondary Education.*

Edward S. Temple, B.S., M.S., Tenn. A. and I. State University. *Assoc. Professor of Social Administration.*

Frances E. Thompson, B.S.A., Massachusetts Art School; M.A., Harvard University; Foreign Study, University of Prague, Czechoslovakia. *Professor of Art Education.*

Early J. Thornton, B.S., Tuskegee Institute; M.S., Massachusetts State College. *Professor of Animal Science.*

Ruby M. Torrey, B.S., M.S., Tenn. A. and I. State College. *Assistant Professor of Chemistry.*

Miriam G. Towns, B.S., Framingham State Teachers College; M.S., Cornell University. *Assistant Professor of Foods and Nutrition.*

Mattye B. Turner, B.S., Tennessee A. and I. State University; M.A., Fisk University. *Instructor in English.*

Alfred C. Tyler, A.B., Morehouse College; M.A., Columbia University. *Associate Professor of Science Education.*

Mazie O. Tyson, B.S., Howard University; M.A., Ohio State University. *Associate Professor of Geography.*

Alma T. Watkins, B.S., Ohio State University; M.A., Columbia University; Ph.D., Cornell University; Foreign Study, Biblioteca Mendendez Y Pelaya, Santander, Spain; University of Toulouse, France; University of Mexico. *Professor and Head of the Department of Modern Foreign Languages.*

Sherman Webster, A.B., South Carolina State College; M.A., New York University; Ed.D., Indiana University. *Professor and Head of the Department of Social Sciences.*

Arthur J. Welch, B.S., Prairie View State College; M.S., Tenn. A. and I. State University; Ed.S., Peabody College. *Associate Professor of Education.*

Fred E. Westbrook, B.S., M.S., Tenn. A. and I. State College; Ph.D., Michigan State College. *Associate Professor and Head of the Department of Plant Science.*

Vesta R. Wheaton, B.S., M.A., Tenn. A. and I. State University. *Instructor in English.*

Samuel R. Whitmon, B.S., M.S., Tenn. A. and I. State University. *Assistant Professor of Biology.*

Jack A. Willeford, B.A., University of Denver; M.A., University of Southern California; Ph.D., Northwestern University. *Part-time Professor of Speech.*

Jamye C. Williams, B.A., Wilberforce University; M.A., Fisk University; Ph.D., Ohio State University. *Professor of Speech.*

Linkwood Williams, B.S., Tuskegee Institute; M.D., Meharry Medical College. *Part-time Flight Instructor.*

Malcolm D. Williams, B.S., Hampton Institute; M.A., Ed.D., Columbia University. *Professor of Education and Dean of the School of Education.*

McDonald Williams, A.B., Litt.M., University of Pittsburgh; Ph.D., Ohio State University. *Professor of English.*

Peggy M. Williams, B.S., Tenn. A. and I. State College; M.A., New York University. *Assistant Professor of Health and Physical Education.*

Rosa L. Williams, B.A., Virginia State College; M.A., Teachers College, Columbia University. *Instructor in English.*

Larry Jordan Willis, B.S., M.A., University of South Carolina; Ph.D., Peabody College. *Part-time Professor of Education.*
 Raleigh A. Wilson, B.A., M.A., Ph.D., University of Iowa. *Professor of History.*
 Samuel von Winbush, B.S., Tennessee A. and I. State University; M.S., Iowa State University of Science and Technology; Ph.D., University of Kansas. *Assistant Professor of Chemistry and Chairman of Chemistry Committee.*
 Henderson K. Wood, B.A., Ohio Wesleyan University; M.A., Fisk University; Ph.D., Indiana University. *Professor and Head of the Department of Biology.*
 Theodore R. Wood, B.S., Tenn. A. and I. State College; M.S., Michigan State College. *Assistant Professor of Animal Science.*
 Roberta Peddy Wright, B.S., Winston-Salem Teachers College; M.A., University of Michigan. *Associate Professor of Education.*

EXTENSION

Ozie L. Adams, B.S., M.S., Tuskegee Institute; Ph.D., Ohio State University. *Associate Professor of Extension, Animal Husbandry.*
 Christine Alexander, B.S., Tenn. A. and I. State College; M.S., Columbia University. *Associate Professor of Extension, Home Economics.*
 Arthur B. Davis, B.S., M.S., Tenn. A. and I. State University. *Instructor, Extension.*
 W. A. Flowers, B.S., Alcorn A. and M. College; M.S., Iowa State College. *Professor and Director of Agricultural and Home Economics Extension*
 Henry C. Hardy, B.S., M.S., Tenn. A. and I. State University. *Associate Professor of Extension, Plant Science.*
 Neal McAlpin, B.S., Tenn. A. and I. State College; M.S., University of Wisconsin. *Assistant Professor of Extension, Plant Service.*
 Willie E. Officer, B.S., M.S., Tenn. A. and I. State College. *Assistant Professor of Extension, Animal Husbandry.*
 Marylou se E. Ritter, B.S., M.S., Tenn. A. and I. State College. *Instructor, Extension, Home Economics.*
 Homer R. Wheaton, B.S., M.S., Tenn. A. and I. State University. *Assistant Professor of Extension, Animal Husbandry.*
 Eddie Williams, B.S., M.S., Tenn. A. and I. State College. *Associate Professor of Extension, Animal Husbandry.*

TECHNICIANS

Alexander Wells, B.S., M.S., Tennessee A. and I. State University. *Technician, Biology.*
 Rudolph Woodberry, B.S., MS., Tenn. A. and I. State University. *Technician, Chemistry and Physics.*

THE UNIVERSITY

Historical Statement

Agricultural and Industrial State Normal School at Nashville was opened on June 19, 1912, under an act of the General Assembly of 1909, which authorized the establishment of the State Normal Schools of Tennessee.

In 1922, the institution was raised to the status of a four-year teachers college and was empowered to grant the bachelor's degree. The first degrees were granted in June, 1924. During the same year, the institution became known as the Agricultural and Industrial State Normal College; and in 1927, "Normal" was dropped from the name of the College.

The General Assembly of 1941 authorized the State Board of Education to upgrade substantially the educational program of the College which included the establishment of graduate studies leading to the master's degree. Graduate curricula were first offered in several branches of teacher education. The first master's degree was awarded by the College in June, 1944.

In August, 1951, the institution was granted university status by approval of the State Board of Education. The reorganization of the institution's educational

program included the establishment of the Graduate School, the School of Arts and Sciences, the School of Education, and the School of Engineering. Provisions were also made for adding schools later, respectively in agriculture, business and home economics.

The University was elevated to a full fledged Land-Grant University by the State Board of Education in August 1958. The Land-Grant University program as approved by the State Board of Education, August, 1958, includes: A School of Agriculture and Home Economics, School of Engineering, School of Arts and Sciences, School of Education, Graduate School, Division of Business, Division of Field Services, and Department of Air Science.

The University is supported from State and Federal funds; the latter in accordance with the Morrill and other Federal Acts which provide funds for land-grant institutions.

PURPOSE OF THE UNIVERSITY

The general purpose of Tennessee Agricultural and Industrial State University is to make maximum contribution to the advancement of the total civilization of the state, nation, and world by so training man that he can gain a reasonable mastery of human and natural resources.

AIMS:

In terms of the student: The University aims to meet the student's needs, ideals, and aspirations by assisting and directing him in a knowledge and understanding of human and natural resources, and of the value of developing and utilizing them to the end that Tennessee may take its rightful place in the vanguard of the states of the nation, and by helping the student become the best possible citizen.

In terms of the faculty: The University aims to offer each faculty member the best possible opportunity for highest service, maximum professional growth and advancement, and utmost happiness.

In terms of the state, nation, and world: The University aims to make maximum contribution to the development of the total civilization with respect to the following aspects of our democratic life: religious attitudes, economic efficiency, social understanding, civic responsibility, wholesome family relations, aesthetic appreciations, health knowledge and habits, and the conservation and utilization of human and natural resources.

THE CAMPUS

The University is located in northwest Nashville, with the central campus on Centennial Boulevard at 35th Avenue. Its campus, farm lands and pastures occupy 450 acres of scenic rolling grounds and fertile fields extending to the southwest banks of the Cumberland River.

The central campus consists of more than thirty permanent modern buildings in a landscape design that rivals the most beautiful campuses in the South.

MAJOR BUILDINGS

The Administration Building is located on the south campus near Centennial Boulevard between 35th and 36th Avenues. It contains the chief administrative offices, some instructional staff offices, classrooms, the general auditorium, which accommodates approximately one thousand persons, the Little Theatre for student productions in drama, and a swimming pool.

The Martha M. Brown Memorial Library, erected in 1927 and enlarged and modernized in 1950, is located near the center of the main campus on the north side of Centennial Boulevard. The present structure has a total capacity

of 120,000 volumes and provides special rooms and facilities for undergraduate and graduate studies, conference and seminar rooms, lounges and other accommodations for the faculty and staff.

The Harned Hall of Science, erected in 1927, is located on the north campus, east of the library. It provides classrooms, lecture auditoriums, modernly equipped laboratories, staff offices and other facilities for instruction and research in biology, chemistry, physics, mathematics, and the general science studies.

The Jim Nance McCord Building, erected in 1950, is located on the south side of the campus at Centennial Boulevard and 35th Avenue. Its modern laboratories contain equipment for instruction and research in mechanics, combustion, electronics, foundry, hydraulics, building and construction, and civil engineering. Other accommodations include a lecture auditorium, classrooms, and offices.

The Industrial Building is located on the south side of the campus at Centennial Boulevard and 35th Avenue. It contains a variety of modernly equipped laboratories, shops, and classrooms for metal work, plumbing, welding, refrigeration, radio, electricity, and business (education and administration.) Several instructional staff offices and the office of the adviser to veteran students are also located in this building.

The Mechanical Engineering Building, erected in 1950, is situated on the northwest campus. It contains a modern heating plant, laboratories and offices for instruction in stationary engineering.

The Vocational Shops Building, located on the north side of the campus, contains shops for auto and aerial mechanics and facilities for flight instruction.

The Jane E. Elliott Building is located west of the University library on the north campus. The building contains the cafeteria, laboratories, lecture rooms, work rooms and studios for the fine arts and crafts, home economics, nursery school, and the office of Public Relations and Alumni Affairs.

The W. W. Lawson Agricultural Building, erected in 1956, is located on the north side of the campus adjacent to the University agricultural laboratories. This building contains classrooms and laboratories equipped for teaching and research in scientific agriculture.

The Agricultural Laboratories and Experimental Units include the modern dairy barn, stock pavilions, farm shops, animal shelters, a modern walking horse barn, agronomy experimental plots, and a greenhouse.

The Frank A. Young Poultry Plant, erected in 1951 at the cost of \$104,000, is located on the southwest side of the main campus. It consists of eighteen major and minor buildings, with ranges for various kinds of poultry, including water fowl. The Plant has the most modern equipment for teaching and experimental work in incubation, brooding, laying, nutrition, genetics, disease diagnosis and control, and poultry grading and marketing.

The Henry Arthur Kean Hall, erected in 1951 at the cost of \$1,500,000, is located on the south side of the campus at Centennial Boulevard and 33rd Avenue. This modern structure contains a gymnasium with a seating capacity of 4,500; health and physical education classrooms and laboratories; staff offices; and facilities for indoor intramural sports, staff and student recreation, and physical therapy.

The William J. Hale Field House and Stadium are located on the northeast campus at Centennial Boulevard and 33rd Avenue. The Field House is a modern stone structure which contains accommodations for visiting athletes and offices and classrooms for the Air Force ROTC unit. The Stadium is equipped for night games and has a seating capacity of 6,000. The turf provides for several kinds of athletic events including football, baseball, and major and minor track sports.

The Student Health Service Building, located west of the women students' dormitories, has facilities for complete examination and limited treatment for students. It contains two wards for the accommodation of six women and six men students respectively.

Hale Hall, located west of the University library, is a modern three-story fire proof residence hall for women students.

Wilson Hall, located north of Hale Hall, accommodates women students.

East Dormitory, located on the northeast part of the campus, accommodates women students.

Edna Rose Hankal Hall, erected in 1957, is located on the north side of the campus. It is a modern three-story residence hall for women students. The building is equipped with modern conveniences for comfortable and wholesome living.

Clement Hall, erected in 1957, is located on the southeast side of the campus. This residence hall is a three-story building providing conveniences for modern living.

Veterans' Hall consists of two units of temporary buildings for the housing of men.

The President's Home is a modern colonial type residence located north of Harned Hall.

The Alumni Building, located on the southeast campus, presently contains accommodations for faculty families and guest rooms for alumni and official visitors to the University.

Veteran Teachers Apartments are located on the south side of the campus for temporary accommodations of a limited number of faculty families.

Faculty Women's Residence Hall, located on the north campus, is a modern three-story building for the accommodation of single faculty women.

The Education Building, erected in 1958, is located on the south side of the campus at Centennial Boulevard and 35th Avenue. It is a modern three-story air conditioned building equipped with classroom and special laboratories; Business Education, Health and Physical Education and Music Education in Education; Industrial Arts Education in Engineering; and Agricultural Education and Home Economics Education in Agriculture and Home Economics.

The Faculty Cottages include four modern homes on the north side of the campus and nine homes adjacent to the central campus on 28th Avenue, North.

The Student Union, erected in 1959, is a modern three story, air-conditioned brick and glass structure. The Union contains administrative offices of Student Personnel Services, offices of the Student Council and of other student organizations. Included in the facilities of the Union are lounges, meeting rooms, a game room, a grill and fountain, the University bookstore and Post Office.

The Music Hall, established in 1960, is located on the north campus. The Music Hall contains modern facilities designed to provide instruction in music education. The building contains practice studios for piano and instrumentation, classrooms, and offices.

The Chemistry Building, completed in Spring of 1961, is a modern two and one-half story air-conditioned building. The building contains undergraduate and research laboratories, classrooms, a lecture hall, offices, balance rooms, a departmental library, and a machine shop.

STUDENT PERSONNEL SERVICES

The Student Personnel Services program aims to assist the student in developing the skills, attitudes, understandings, and insights which will assure full expression of his powers as a whole, dynamic person. Emphasis is on university relationships and experiences complementing formal instruction.

Reaching the interest, needs, and purposes of all students for superior educational, social, vocational, and cultural orientation, adjustment, and growth involves the supplemental and coordinate planning of numerous university officials, faculty and staff members; among them are the Dean of Students, the Dean of Men, the Dean of Women, the Registrar, the Director of the Registrar, the Director of Student Health Service, the Deans of Schools Student Health Service, the Deans of Schools and Heads of Departments, the Director of the Placement Bureau, Director of Veterans Affairs, Director of Housing, Directors of Residence Halls, Director of Food Service, Director of Off-Campus Housing, supporting counselors such as major advisers, advisers to foreign students; directors of university agencies and organizations affecting the welfare of students; committees such as the Guidance Committee, the Freshman Week Committee, Social Committee, the Decorum Committee, the Faculty Advisory Committee; and consultant specialists in medicine, psychiatry, psychology, social work, community relations, and vocational choice and placement.

COUNSELING AND GUIDANCE

Upon being admitted to the University, each student is assigned by the Registrar on the basis of the student's choice of school to the Dean of that School, who refers the student to the head of the major department for guidance. The department head assigns every student majoring in the department to a teacher in the department known as the major adviser.

The responsibility for the selection of courses rests, in the final analysis, upon the student; and it is not the province of the adviser to refuse approval of the course which the student is entitled to elect. Similarly, it is the primary duty of the student to pursue courses in their proper order to meet the requirements for graduation. When the student registers for each quarter, he is required to consult his adviser concerning his choice of studies and must obtain written approval of the adviser on all schedules to be pursued. The student is urged, further, to confer with his adviser frequently, at least monthly, during each quarter.

Major advisers counsel students not only in curricular or educational matters but give attention to varied personal and inter-personal problems of students—health, financial adjustment, social adjustment, vocational choice and proposed after-college adjustment to life.

Major advisers who counsel freshman students assist the students with innumerable matters such as adaptation to new ideas, how to study, health and emotional adjustment, budgeting time and money, extraclass activities, and residence hall and home relationships.

In solving specific problems, the Dean of Students assists students individually and in groups directly and by referral to responsible offices listed in the Student Personnel Services Directory and/or appropriate on-campus or off-campus sources of assistance.

Tests and inventories are available for use with all students. These include tests of mental ability, aptitude and achievement, personality, and vocational inventories.

UNIVERSITY COUNSELORS

University Counselors are sophomores, juniors, and seniors who, because of their leadership ability, have been chosen to assist with the orientation of freshmen and other phases of the university guidance program. The University Counselors include two groups: the Senior Counselors, who have had more than one year's experience as student counselors, and the Junior Counselors, who have had less than a year's experience as student counselors.

FRESHMAN WEEK

All freshmen are expected to be at the University the week preceding the beginning of instruction in September and to remain throughout the week. The week is devoted to lectures and discussions on subjects of importance to new students, conferences with advisers and counselors, health examinations, interest inventories, tests of mental ability, aptitude and achievement, and registration and enrollment in classes.

Freshman Placement Examinations

During Freshman Orientation Week, freshman students are given the following placement tests: mental ability, reading, English, mathematics, and an interest inventory. The tests are scored and processed in the University Testing Bureau, and the results for each student are reported on an individual profile chart showing the student's percentile rank on each test.

The student's adviser uses the profile chart as a basis for educational guidance. Students who show deficiencies in the above subject areas are given an opportunity to remove the deficiency. The English department and the mathematics department offer non-credit courses for freshman students who show a deficiency in English or mathematics.

PSYCHO-EDUCATIONAL CLINIC

The Psycho-Educational Clinic, under the direction of the head of the department of psychology, offers educational guidance based on test results with particular emphasis on correcting reading difficulties.

Children's Level: (A series to public schools) Mental testing and diagnosis of learning disabilities, with recommendations for treatments.

College Level: Educational guidance based on mental testing, aptitude testing, and interest and personality inventories. Diagnosis of academic failure on the college level and counseling relative to removing the cause of failure.

How to Study: (Psychology 100) Non-credit course, required of psychology majors, open to other students interested in developing correct study habits.

Advanced psychology majors and graduate students in education may receive credit for supervised work in the Psycho-Educational Clinic.

THE COMMUNICATIONS CLINIC

The Communications Clinic is a University center at which work in reading, writing, speaking and listening is integrated for the purpose of helping students to improve in their communication through language. The Clinic was established to supplement class work by providing for more specialized attention to individual problems of communication skills.

The Clinic is open to all students of the University. In addition to clinical experience for students who may be deficient in communication skill, much of the work of the Clinic is devoted to students who need additional training in language skills to assure maximum benefit from university experiences. A part of the writing program is designed for seniors and graduate students who require special counsel concerning research reports.

Students may remain in the Clinic as long as they show a need for improvement, and respond favorably to corrective procedures.

THE STUDENT HANDBOOK

The student handbook is a means of facilitating communication among the members of the University. It serves as a source of necessary and useful information which will help the student understand his privileges, rights, and responsibilities pertaining to student affairs. The handbook contributes to the high level of cooperative and constructive relationships between students and the various departments of the University.

LIVING ACCOMMODATIONS

On-Campus

All residence halls provide opportunities for personal, social, and intellectual companionships and experiences in group living.

Housing facilities for women are provided in Hale Hall, Wilson Hall, Edna R. Hankal Hall and East Hall and for men in Clement Hall, Veterans Halls, and College Hill Housing Unit for University Men.

Rooms are furnished with twin beds or double decker beds, dressers, study tables, and straight chairs. Each student who has been approved for living in one of the residence halls should bring a pillow, pillow cases, sheets, bedspreads, blankets, two pairs of curtains, towels, dresser and table covers, and any other accessories which will make his room more comfortable and attractive.

Off-Campus

There are a limited number of University-approved homes in the city where students may live. All off-campus housing is to be approved by the University.

Students who live in homes in the city are expected to maintain the same general standards required of students who live on the campus.

CAFETERIA

The University Cafeteria serves three meals daily, Monday through Friday, and two meals daily on Saturday and Sunday. The meals are well balanced and excellently prepared and are served cafeteria style. Students who live on the campus are expected to purchase a "meal ticket" for each quarter in residence.

Those individuals taking meals in the University Cafeteria will be expected to take their meals during the regular meal hours.

Schedule of meal hours will be posted on residence hall bulletin boards.

STUDENT HEALTH SERVICE

The University maintains a Health Service for students. This service includes a physical examination of all entering students, a follow-up of examinations, and regularly scheduled medical and dental clinics. The Student Health Center offers twenty-four hour service with facilities for hospitalization of students confined by illness. These services are provided by a staff of physicians and registered nurses.

RECREATION

Recreation facilities include a Student Union, indoor and outdoor swimming pools, an athletic field equipped for night activities, a gymnasium, a bridle path, Tennessee walking horses and American saddle horses.

In addition to the above, Kean Hall provides the following facilities: archery range, six badminton courts, basketball courts, boxing and wrestling room, bowling alleys, dancing studio, deck tennis, gymnasium, indoor play fields, inside handball court, recreation rooms, three shuffleboard courts, five volleyball courts, and a tennis court.

STUDENT ORGANIZATIONS AND ACTIVITIES

A well balanced program of activities is available to students at the University. Cultural, social and recreational activities are sponsored, particularly by the Lyceum, Social and Athletic Committees, the Student Councils, Department of Speech and Drama, and Department of Art and Music Education. Outstanding concert artists, speakers, orchestras, and dramatic productions are brought to the campus.

Intelligent and active participation in a reasonable number of extra-class activities provides opportunity for leadership, cooperation, and fellowship as well as the development of desirable skills, attitudes, appreciation and modes of behavior.

Student Government

The Student Council, the key student organization, shares with the administration in planning and regulating student affairs. It appoints student representatives to University committees, stimulates student participation in campus life and recommends student organizations to the administration for official recognition.

Student Publications

THE METER, a monthly publication of the student body, endeavors to keep students informed of the activities of the University and provides opportunity for the expression of student ideas and opinions.

THE TENNESSEAN is the University yearbook.

Athletic Organizations

Varsity and intramural athletics are promoted. (See Department of Health and Physical Education.) The "T" Club is composed of men and women students who have won the University Letter in a major sport. The Women's Athletic Association is open to all women students of the University who meet the requirements of the association.

Class Organizations

University classes (Sophomore, Junior, and Senior) organize in the spring quarter. The incoming Freshman class is organized in the fall quarter. At the meetings throughout the year, plans are made for social and other class programs. In the fall quarters, students in the Graduate School organize the Graduate Club.

Departmental Organizations

Departmental organizations at the University include:

AFROTC Drill Team ("Tiger Jets"). For outstanding cadets who possess desirable leadership potential.

AFROTC Society. A social organization open to all enrolled cadets.

American Chemical Society, Student Affiliate Chapter. For majors in Chemistry.

American Society of Agronomy. For majors in Agriculture.

Arnold Air Society. A national AFROTC organization for outstanding cadets enrolled in the AFROTC Course.

Association for Childhood Education International. For Elementary Education majors.

Biology Club. For Biology majors.

Future Business Leaders of America. For Business Administration majors.

Future Teachers of America. For Education majors.

Hepermots. For Health, Physical Education and Recreation majors.

History Study Club. For History majors.

Home Economics Club. For Home Economics majors.

Industrial Arts Club. For Industrial Education majors.

Institute of Radio Engineers. For junior and senior Electrical Engineering majors. Also open to junior and senior Mathematics or Physics majors.

Les Amis de la France. For students of French.

Los Buenos Vecinos. For students of Spanish.

Mathematics Club. For majors and minors in Mathematics.

Music Education National Conference, Chapter 381. National organization for majors in Music.

National Technical Society. For Engineering majors.

New Farmers of America. For Agriculture majors.

Psychology Club. For Psychology majors.

Science Education Club. For majors in science education and other prospective elementary and secondary science teachers.

Social Science Club. For Political Science, Sociology, and Social Administration majors.

Student Affiliate Chapter of American Chemical Society. For Chemistry majors.

Town Hall. For all students. An organization dedicated to the discussion of current public issues.

TSU Aero Tigers. For Aviation Education majors.

Women's Intramural Board.

Women's Athletic Association.

Departmental Publications

The departmental student publications include:

The Bio-Log, published monthly by the Biology Club.

The Test Tube, published monthly by the Student Affiliate Chapter—American Chemical Society.

Weekly Bulletin, published by the AFROTC.

The Rocket, published by the AFROTC.

Fraternities and Sororities

The following national social Greek letter fraternities have chapters at the university: Alpha Phi Alpha, Kappa Alpha Psi, Omega Psi Phi, Phi Beta Sigma. Their respective pledge clubs are the Sphinx Club, Scrollers Club, Lampados Club, and Crescent Club.

The following national Greek letter sororities have chapters at the University: Alpha Kappa Alpha, Delta Sigma Theta, Sigma Gamma Rho, Zeta Phi Beta. Their respective pledge clubs are the Ivy Leaf Club, Pyramid Club, Aurora Club, and Archonian Club.

The Inter-Fraternity Council

The Inter-Fraternity Council exists at the University to promote greater understanding and cooperation among the fraternities and sororities; to serve as an instrument through which the fraternities and sororities and the general administration of the University may cooperate in aiding the organization to maintain high standards of intellectual and social achievement; to formulate and recommend actions of the Council; and to administer, under the jurisdiction of the Student Council, such regulations as are deemed necessary for the common interest of all fraternities and sororities.

The Independent Society

Students who are not members of a sorority, nor of a fraternity nor a pledge club, are eligible for membership in this organization.

Religious Organizations and Activities

The University is a public supported institution and teaches no creed in its classrooms. However, several religious organizations and activities are on the campus for the purpose of helping students recognize the resources of religion and practice a desirable philosophy of life. The religious organizations and activities of the University include the Student Christian Association, Baptist Student Union, Canterbury Club, Clericus, Newman Club, The Baha'i Club, Methodist Student Movement, Inter-Faith Council, Sunday School, Quiet Hour, Sunday Morning Worship Service, Westminster Fellowship, and Religious Emphasis Week.

Residence Hall Organizations

The students in each residence hall are organized in a Residence Hall Council. These organizations regulate, as far as possible, all matters pertaining to problems and privileges of the residents.

Speech and Dramatic Organizations

The Speech and Dramatic organizations of the University include:

Children's Theatre. Open to campus and community children.

Literary Guild. Open to all students.

Laboratory Players. Open to all students, under direction of Speech and Drama majors.

TSU Players' Guild. Open to all students.

Youth Theatre. Open to campus and community youth.

Musical Organizations

Musical organizations at the University include:

A Cappella Choir. For Music majors.

Meistersingers. Open to all students.

String Club. Open to all students and faculty members.

University Marching and Concert Bands. Open to students of Music.

STUDENT EMPLOYMENT

The University attempts to provide part-time employment for a limited number of students who establish needs for financial assistance, and who, by their scholarship records, appear capable of making satisfactory grades as work-aid students.

Inasmuch as the first year is one of general adjustment to university life and studies, entering freshman students are advised not to seek employment on the campus or in the city.

Students who desire part-time work may apply at the Office of Student Work-Aid.

Students who are interested in obtaining part-time employment in the city may make inquiries at the University Placement Bureau.

The University may deny a student the privilege of working if such employment jeopardizes the welfare of the student or the University in any manner.

NATIONAL HONOR SOCIETIES

The National Honor Societies of the University include:

Alpha Kappa Mu Honor Society, Phi Beta Tau Chapter. An organization open to students of Junior Class standing or above with a cumulative average of 3.3 or above.

Beta Kappa Chi Scientific Society, Xi Chapter. An organization for outstanding students and scholars in natural sciences and mathematics.

Gamma Theta Upsilon Geography Fraternity, Alpha Beta Chapter. An organization for outstanding students and scholars in geography.

Kappa Delta Pi Honor Society, Zeta Chi Chapter. An organization for outstanding students and scholars in education.

Phi Mu Alpha Sinfonia, Eta Xi Chapter. Music fraternity open to outstanding students in the Department of Music.

Pi Omega Pi Fraternity, Beta Psi Chapter. An organization for outstanding students interested in teaching business subjects.

Sigma Delta Pi, Gamma Eta Chapter. An organization for outstanding students in Spanish.

Sigma Rho Sigma, Gamma Chapter. An organization for future social science teachers.

Theta Alpha Phi, Epsilon Chapter. An organization for outstanding students in drama.

Pi Delta Phi, Beta Omicron Chapter. An organization for outstanding students in French.

HONORS, SCHOLARSHIPS AND AWARDS

Air Force Awards are presented annually to distinguished cadets.

Alumni Scholarship Awards and Gifts are made annually by various chapters over the United States and reunion classes.

Athletic Awards are presented annually to those active in intercollegiate sports and to those sponsoring athletic events.

Departmental Awards and Departmental Club Awards are presented annually by Business Education, Home Economics, Industrial Education, History Study Club, Literary Guild, Mathematics Club, Music Department, Student Affiliate Chapter of the American Chemical Society, and the Tennessee State Players' Guild.

Fraternity and Sorority Scholarship and Achievement Awards are made annually by Alpha Kappa Alpha Sorority, Alpha Phi Alpha Fraternity, Delta Sigma Theta Sorority, Omega Psi Phi Fraternity, Phi Beta Sigma Fraternity, Sigma Gamma Rho Sorority, and Zeta Phi Beta Sorority.

Honor Roll. Students who earn a quality point average of 3.25 (B plus) or above in all subjects and who pursue a minimum of 12 quarter credit hours in the regular curriculum shall be placed on the University Honor Roll for that quarter.

Masonic Scholarships. The Most Worshipful Prince Hall Grand Lodge of Free and Accepted Masons of Tennessee and its jurisdictions give five annual scholarships to the students of the University under the following categories: (1) the highest ranking freshman students, (2) students of unusual ability and promise, (3) sons and daughters of living Masons, (4) sons and daughters of deceased Masons and (5) students of the University who are Tennessee Prince Hall Masons.

The National Honor Societies present awards annually to members elected during the year: Alpha Kappa Mu, Beta Kappa Chi, Gamma Theta Upsilon, Kappa Delta Pi, Pi Delta Phi, Sigma Delta Pi, Sigma Rho Sigma, Pi Omega Pi, and Theta Alpha Phi.

Special Awards and Trophies presented annually include the G. S. Hamilton Award, the Hamilton High School Award, the Laura M. Averitte Award, the Susie O. Bryant Trophy, and the United Business Education Association Smead Award.

Student Council members are presented awards annually.

University Counselors who are graduating seniors and who have served at least two years as University Counselors assisting with the Freshman Orientation Program and the general University Guidance Program receive awards.

Who's Who in American Universities and Colleges. Recognition in "Who's Who in American Universities and Colleges" is given students classified as juniors, seniors, and graduates who are outstanding in scholarship, leadership, educational and extra-curricular activities, general citizenship, and service to the University.

NATIONAL DEFENSE STUDENT LOAN

Tennessee A. & I. State University is a participating member of the National Defense Student Loan program. High school seniors who have been accepted for admission to the University and currently enrolled students are eligible to apply for one of these loans.

PLACEMENT BUREAU

The Placement Bureau assists special students, seniors, and alumni in securing positions for which they are qualified, offers follow-up and counseling services and arranges interviews between prospective employees and employers. Students are also assisted in obtaining part-time employment.

The Placement Bureau maintains permanent personnel records, including recommendations and ratings of the graduates. These records serve as the source of information which is frequently requested from the University. Mailing forms, including scholastic achievements, background, work experience, faculty recommendations, and other pertinent information are compiled and sent to a prospective employer at the request of the graduate, a faculty member, or the employer.

Graduating seniors and graduate students are required to register with the Placement Bureau which is located in Room 220, Student Union Building. The services of the Placement Bureau are free to employers, students, and alumni of the University.

THE BUREAU OF PUBLIC RELATIONS AND ALUMNI AFFAIRS

The Bureau of Public Relations and Alumni Affairs has a twofold purpose: First, to effect creative expression and accurate interpretation of University policies and activities to its many publics; and second, to serve as a liaison agency

for the Alumni Association and the University. The Bureau makes use of all forms of communication media: local and national press, radio, television, news-reels and other channels.

The Director of the Bureau is also the Coordinator of Alumni Affairs. In this capacity a major responsibility of the Director and the staff is to maintain contact with the thousands of alumni through the Alumni Association, to keep them informed of the University's progress, and to determine the impact that the alumni are making upon the American culture.

TRAFFIC AND PARKING REGULATIONS

Students operating a motor vehicle on the campus are required to register this vehicle each school year with the Dean of Students' Office. The University motor vehicle registration sticker which is issued must be displayed on the lower right side of the windshield.

GENERAL INFORMATION AND FEES

Quarterly Fees

Tuition:	
Residents of Tennessee	\$00.00
Non-Residents of Tennessee	55.00
Composite Fee	
Undergraduate	55.00
Graduate	65.00
Part-time students:	
Undergraduate, under 12 hours (each credit hr.)	5.00
Graduate, under 9 hours (each credit hr.)	6.00
Board (in cafeteria).....	105.00
Room (in dormitories)	
New dormitories	51.00
All other dormitories.....	42.00

Fees for piano courses are \$7.00 each quarter and Organ courses, \$20.00 each quarter. These fees are stated in the course descriptions. Freshmen engineering students should add \$24.50 for drawing instruments.

Explanation of Fees

Tuition Fees: Students who are residents of Tennessee are not required to pay a tuition fee. Students who are not residents of Tennessee are required to pay a tuition fee of \$55.00 per quarter.

Composite Fees: All undergraduate students are required to pay \$55.00 per quarter for composite fees. Graduate students pay \$65.00 per quarter for this fee.

Payment of Fees

Regular fees, including tuition, board and room, maintenance, and laboratory are paid on the quarterly or term basis. These fees must be paid at the time of registration in the fall, winter, spring, and each summer term. Students who do not live on the campus must pay the \$55.00 in full.

Exceptions to this regulation are: A Tennessee student who rooms in one of the new dormitories and boards in the cafeteria may make a down payment of \$141.00, with monthly payments of \$35.00. The total amount for this student is \$211.00 (per quarter). An out-of-state student who rooms in one of the new dormitories and boards in the cafeteria may make a down payment of \$196.00, with monthly payments of \$35.00. The total amount for this student is \$266.00 (per quarter).

A Tennessee student who rooms in other dormitories and boards in the cafeteria may make a down payment of \$132.00, with monthly payments of \$35.00. The total amount for this student is \$202.00 (per quarter). An out-of-state student who rooms in other dormitories and boards in the cafeteria may make a down payment of \$187.00, with monthly payments of \$35.00. The total amount for this student is \$257.00 (per quarter).

Sending of Money

The University advises against the sending of cash money through the mail. In case the money is misplaced through the mails the University assumes no responsibility for the loss. All letters containing payments to the University should be addressed to the Office of the Bursar, Tennessee A. and I. State University.

PERSONAL CHECKS ARE NOT ACCEPTED IN THE PAYMENT OF REGULAR FEES, ROOM RESERVATION FEES, AND TRANSCRIPT FEES. If the check is certified then it becomes acceptable along with other certified remittances (American Express, United States Postal Money Order, Cashiers' Check, Bank Money Order and Travelers Cheque).

Special Fees

Transcript Fees: A student may secure an official transcript of his record by the payment of a fee of \$1.00. The first transcript issued and all other requests require the transcript fee of \$1.00 as prescribed by the University. No transcript will be issued for a student whose university account is delinquent. All in-state and out-of-state forms for certification to be filled in by the Office of the Registrar require the usual transcript fee of \$1.00.

Graduation Fees: A diploma fee of \$15.00 shall be paid before one is eligible to receive a degree from the University.

Music Fees: Piano or Voice, one lesson weekly, \$7.00 per quarter; two lessons weekly, \$14.00 per quarter. Organ, one lesson weekly, \$20.00 per quarter.

Class Audit Fees: A student who is not regularly enrolled may audit courses upon the payment of a fee of \$5.00 per quarter for each course audited.

Late Registration: Students who register after the last regular registration day in any registration period are late. A late registration fee (\$5.00) will be assessed beginning the third day after the close of regular registration.

Class Absences before and after Holidays: A penalty of \$5.00 is charged for non-attendance at the last meeting of any class before a holiday or the first meeting of any class after a holiday.

Dropping a Course: A fee of \$1.00 is charged for each course dropped later than the Saturday following the close of "Late Registration."

Conference 600: A fee of \$15.00 is charged for enrolling in Conference 600, a non-credit activity which permits a student to use university facilities after he has been enrolled in Thesis Writing or Project Writing in a previous quarter. This fee is prorated at \$7.50 for each six week's term during the summer quarter.

Master Thesis Binding Fee: A fee of \$14.00 is charged for binding master theses.

ROOM RESERVATIONS

A \$10.00 room reservation fee is required. Room reservation fees are not refundable. This fee is forfeited if the room is not taken; it is applied on expenses if the room is taken. The room reservation fee should be paid only after the applicant has been officially notified of his acceptance by the Office of the Registrar, indicating that a room has been reserved.

ADMISSION

Procedures

All communications regarding admission, credit hours, transfers of credits, and advance standing should be addressed to the Registrar of the University. Applications should be filed for the ensuing school year at or near the close

of the current year in order to allow sufficient time for the action of the Registrar. The application form and other directions will be sent from the Office of the Registrar upon request. These should be filled out and mailed promptly. Transcripts of records from all high schools and colleges previously attended, together with all other required information, must be on file in the Office of the Registrar before registration is completed. All applicants must receive official notice from the Office of the Registrar that they have been approved for admission before presenting themselves for registration.

General Requirements

1. The applicant must be at least 16 years of age.
2. The applicant must furnish satisfactory evidence of good moral character, health and personality.
3. The applicant must file an official application form with the Office of the Registrar.
4. The official transcript of all high school credits and a small photograph must be filed in the Office of the Registrar before the applicant may be officially admitted to the freshman class; and all high school and college transcripts must be filed for admission to advanced standing.
5. If a period of more than ninety days (one regular quarter) has elapsed between graduation from high school and the date of entering the University, the applicant will be required to submit a notarized statement as to whether or not he attended another college or university during this time.
6. A college student whose education has been interrupted for more than ninety days (one regular quarter) must present a notarized statement as to whether or not he has attended another college or university during this time.
7. All required data must be filed in the Office of the Registrar for consideration for admission.
8. All students, except those who seek admission with advanced standing, must take an aptitude test, the English placement test, a health examination, and the special tests required by the department in which the major is to be pursued.
9. All new students must attend the orientation period at the University one week prior to official registration unless given special permission by the Registrar.

METHODS OF ADMISSION—UNDERGRADUATE

Applicants who meet the requirements listed above are eligible for admission by the following methods:

Applicants must present a transcript of credits showing graduation from an approved high school. Students must present one unit in American History or they will be required to enroll for the course prior to college graduation. High school credits and/or graduation from correspondence schools are not acceptable at this University.

Accepted by High School Equivalency Examination

Veterans of the armed services who entered service before high school graduation, and civilians 21 years of age or older, who may have discontinued high school before graduation may be admitted to college by taking the G. E. D. High School Equivalency Examination), and earning a score that qualifies the student for a high school diploma in the State of Tennessee. The average score of 50 for civilians or an average score of 45 for veterans with no score on a single test less than 35 is required.

Admission with Advanced Standing from Accredited Institutions

Students who have attended other accredited colleges or universities may

apply for admission to Tennessee A. and I. State University with advanced standing by fulfilling the following requirements:

1. An official record of transcripts from all high schools, colleges, or universities previously attended must be placed on file in the Office of the Registrar, whether or not the applicant wishes to receive credit for such work.
2. The courses presented for advanced credits must be substantially equivalent to those afforded at Tennessee A. and I. State University.
3. A student who has failed in his work at another institution and is not entitled to continue there will not be admitted to the University.
4. The applicant must have been cleared of all financial obligations and granted honorable dismissal from the last institution attended.
5. Students who have attended other colleges or universities cannot be admitted unless they present a scholastic grade average of "C" based on the grading system of Tennessee A. and I. State University. A student who has attended this University and transfers to another accredited college or university will be considered for re-admission on the basis of the scholastic average earned at that college or university.
6. Students who have attended other colleges or universities cannot be admitted as freshmen solely on the basis of their preparatory school records.
7. A student who fails to present credits from all colleges which he has attended prior to registration must forfeit the right to later claims of such credits after admission.
8. Students who present transfer credits from several colleges or universities will be considered for admission on the basis of the scholastic work done at all institutions attended.

Admission with Advanced Standing from Non-Accredited Colleges

Students who desire to enter Tennessee A. and I. State University from non-accredited colleges are to register under the following stipulations:

- A. Admitted on probation for the first 48 hours credit.
- B. Credit for work done prior to entering Tennessee A. and I. State University be granted as:
 1. Full credit if work at Tennessee A. and I. State University is 3.00 or above.
 2. Three-fourths credit if work at Tennessee A. and I. State University is below 3.00 or not less than 2.50.
 3. Half credit if work at Tennessee A. and I. State University is below 2.50 but not less than 2.00.
 4. No credit if work at Tennessee A. and I. State University is below 2.00.

Admission with Special Adult Student Standing

Young men and women who are twenty-one years of age and over, and who have not completed four years of high school work may be admitted as special students and permitted to take courses for which they are prepared provided that such special students must satisfy all entrance requirements to qualify for a diploma or a degree. Such students may want to qualify for a high school equivalency diploma.

Readmission to the University

A student in good standing with the University whose attendance has been interrupted for one quarter or more must apply for readmission and submit a notarized statement to the effect that no other college has been attended. Re-entrance applications will be sent from the Office of the Registrar upon request.

Re-entering applicants must receive notice of approval before arriving at the University.

A student whose attendance at the University has been interrupted one quarter or more while on scholarship probation (see Scholarship Standards

page 36) must in addition to making application for readmission, satisfy the Registrar that his or her scholarship will be raised at least to the minimum passing standards of the University. Such a student will be readmitted on probationary status, and will be accorded the privilege of removing the probation.

A student who has been Dropped Permanently—"Low Scholarship"—may not be readmitted to the University.

GRADUATE ADMISSION

Requirements for admission to the Graduate School at the University are outlined on page 44.

REGISTRATION

The Regular Registration Period

All students are expected to register and pay their fees before the day designated on the University Calendar for classes to begin. Sufficient time is allowed during registration for the student to consult with the major adviser and to complete all procedures necessary for admission to classes. Written directions for registration procedures, and the necessary registration forms, will be handed beginning freshmen and other new students during the orientation period. Other students will receive written directions and registration forms when they present themselves for registration.

Late Registration

Students who register after the last regular registration day in any registration period are late. A late registration fee (\$5.00) will be assessed beginning the third day after the close of regular registration.

Resident Address and Name

The local and permanent resident addresses must be printed legibly in ink and in full on all registration forms that require them. Any change in either address should be reported to the Office of the Registrar without delay. Forms for the change of address or a change of name may be obtained from the Office of the Registrar.

Physical Examination

All entering freshmen and new students are required to take a physical examination under the supervision of the University and student health service staff. Appointment for the examination must be made at registration.

Completion of Registration

Registration is complete when:

1. All forms have been filled out and the two schedule cards, permit, and envelope have been stamped by the preliminary checker.
2. All fees have been paid and assessment card, two schedule cards, and the permit have been stamped by the Bursar and returned to the student.
3. Two schedule cards and the permit have been stamped by the Final Checker, and one schedule card has been returned to the student bearing the stamp of the preliminary checker, the final checker, and the Bursar.
4. A photograph has been taken as a part of registration.
5. The physical examination has been completed.

CLASS LOADS

Normal and Minimum Class Loads: The normal class load for each quarter is one-twelfth (1/12) of the total number of quarter hours required for graduation in any particular curriculum and the minimum class load is 12.0 quarter hours. One quarter hour of required physical education or one quarter hour of choir, but not both, may be added to the normal load.

A maximum of fifteen (15) quarter hours may be pursued per quarter by graduate students.

A minimum of twelve (12) quarter hours per quarter is allowed for a regularly enrolled student. A student may pursue less than twelve (12) quarter hours per quarter only by special approval of the Registrar.

The appropriate form for requesting a reduced load may be secured from the Registrar's Office. The form is executed and the student secures the signatures of the Department Head, the Dean of the School, and the Dean of Students. If the form is approved by the Registrar, he must also approve the two schedule cards as a part of the student's registration.

Probationary Student Class Loads: A student who incurs scholarship probation in any quarter (see scholarship standards, page 36) will be allowed to carry a maximum of 14 or a minimum of 12 quarter hours.

Adding Courses: A student may add courses within ten calendar days after the first scheduled meeting of the class. To add a course, the student must secure a course card and obtain the signature of approval from the teacher of the course involved and the major adviser. This approval must be executed on the official add form which may be obtained from the Office of the Registrar.

Dropping Courses: A student is permitted with proper execution of the drop form to drop a twelve weeks' course within the first four weeks of the course.

The student is permitted with proper execution of the drop form to drop a six weeks' course within the first two weeks of the course.

A fee of \$1.00 is charged for each course dropped later than the Saturday following the close of "Late Registration."

Change of Major Field: In order to change from one major to another, the student must obtain the official "Change of Major Form" from the Office of the Registrar and complete it with the signatures of the adviser of the program to be taken, the adviser of the program to be discontinued, and the Registrar. All records of the student must be transferred from the former to the new adviser.

The Change of Major Form must be filed in the Registrar's Office one week (seven calendar days) prior to the beginning of final examinations for the current quarter, if the change is to be effective the following quarter.

CLASS ADMISSION AND ATTENDANCE

Admission

A student must attend class beginning with the first class meeting; however, he is not officially enrolled until he presents the teacher a schedule card signed and dated by the Bursar.

Class Auditors

Regularly enrolled students may enter classes as auditors with the approval of the major adviser and the teacher of the course. The regular registration procedure is followed in registering for a class to be audited. The faculty member issuing the card shall indicate "Audit—No Credit." A regularly enrolled student pays a fee of \$1.00 for each course audited.

Persons other than regularly enrolled students may be permitted to audit classes only with the consent of the Registrar and with the approval of the teacher of the course. Such persons shall follow the regular registration procedure and pay \$5.00 for each course to be audited.

Auditors are not under obligations of regular attendance, class preparation, recitation, or examination; nor do they receive credit. At the end of the quarter, the "audit" course card will be marked "No Credit Audit" by the teacher and returned to the Office of the Registrar.

Class Attendance

It is a regulation of the University that teachers keep accurate records of all class attendance. Regular and punctual attendance is required. Therefore, the student's attendance record becomes an important part of his personnel data.

Upon recommendation of the instructor and with the approval of the Dean of the School, a student may be dismissed from the course because of failure to attend class regularly and on time. A student who is dismissed from the course because of irregular attendance may be awarded a grade of "Failure".

ABSENCES

Student absences are counted from the first scheduled meeting of the class.

The student who absents himself from class is under obligation to perform all requirements of each course in which he is registered, regardless of the cause or causes of absences.

Any student knowing he must be absent from class during final examination will notify his instructor and the Office of the Dean of the School, who reports such cases to the Dean of the Faculty. When a student has absented himself from class the total number of times the class meets per week, he is to be reported to the Dean of the School and the Dean of Students, who reports such cases to the Dean of the Faculty.

An official excuse: An official excuse is identified as absence granted by the University for which the University is responsible. All official excuses for absences from classes must be approved by the Dean of the Faculty.

Class Absences before and after Holidays

A student who fails to attend the last meeting of each class before a holiday or the first meeting of each class following a holiday shall incur three absences for each class not attended, and will be assessed a penalty of \$5.00 for one or more class absences incurred.

Tardiness and Leaving Classes

The student is expected to begin class on time and remain during the full class period. Tardiness in attending class and leaving class before the end of the period constitute delinquencies, except when granted by the teacher.

A student who is late to class and/or leaves the class before the end of the specified class period without reasonable cause may be marked absent for the entire period at the discretion of the teacher.

GRADING SYSTEM

Course grades for undergraduate and graduate students are awarded as follows:

"A" (Excellent)	4 quality points per quarter hour
"B" (Good)	3 quality points per quarter hour
"C" (Average)	2 quality points per quarter hour
"D" (Poor)	1 quality point per quarter hour
"F" (Failure)	0 quality point per quarter hour
"I" (Incomplete)	0 quality point per quarter hour
"W" (Withdrawal)	0 quality point per quarter hour
"S" (Satisfactory in non-credit courses)	0 quality point per quarter hour
"U" (Unsatisfactory in non-credit courses)	0 quality point per quarter hour

"I" is given to a student whose recitation is satisfactory but whose grades are withheld on account of failure to complete some required portion of the course, examination, laboratory, shop, or parallel exercises. The incomplete "I" grade will be changed to "N.C." (no credit) if not removed within one calendar year.

"W" is recorded for the student who officially withdraws from the entire University.

"F" is given to a student who fails to do a passing quality of work.

"S" is given to a student who gives satisfactory performance in a non-credit course.

"U" is given to a student who gives unsatisfactory performance in a non-credit course.

"Dropped"—a student is listed as having "dropped" a course only if he has followed the established procedure and has cleared through the Office of the Registrar.

Deficiency Grades

Grades of Incomplete. "Incomplete" is a temporary grade which must be removed from the undergraduate student's permanent record within one calendar year from the date the grade was awarded. If all requirements of a course in which the "I" was awarded are not met within one calendar year, the grade of "I" will be changed to "N.C." (no credit). The student is responsible for initiating all necessary steps to remove the deficiency grade:

1. Inquire in the Office of the Registrar regarding the course in which the grade of "I" has been awarded.
2. Pay to the Bursar's Office the fee of \$1.00 (applicable only to undergraduate courses).
3. Secure from the Office of the Registrar the replacement grade card.
4. Take the replacement grade card to the teacher of the course in which the "I" was earned.
5. The replacement grade card must be filed in the Office of the Registrar in person by the teacher of the course after it has been properly filled in (name of student, grade awarded, credit hours which the course carries, title of the course, major adviser's signature, and instructor's signature).
6. The "I" removal card must be in the Office of the Registrar no later than the last day of the quarter in which the "I" grade expires (a 12 month period).

Repeat Grades. With the approval of the student's Major Department Head, the student may repeat courses in which he has earned "D's" or "F's." The last grade awarded in a course repeated will be counted in calculating the over-all scholastic (grade point) average.

SCHOLARSHIP STANDARDS AND PROBATION

Scholarship Standards

1. All undergraduate students of the University are expected to maintain twice the number of quality points as the number of credit hours received.
2. A minimum cumulative average of "C" (2.00) is required for graduation in all bachelor degree programs.
3. A minimum cumulative average of "B" (3.00) is required for graduation in the master degree programs.

Probation

1. A student who earns a grade point average of less than 1.50 during the quarter will be placed on probation.
2. A student who fails in 50% or more of the credit hours carried will be placed on probation or dismissed at the end of any quarter.

A student who is on probation cannot carry more than 14.0 quarter hours per quarter. Probation must be removed within the next two quarters in residence. A student who fails to remove the probation status during the next two quarters in residence will be suspended for an indefinite period.

Upon being re-admitted a student must remove probation during the first quarter in residence.

Required Cumulative Grade Point Average

The following cumulative grade point averages are enforced.

Quarter	Cumulative Grade Point Average
End of 1st.....	1.50
End of 2nd.....	1.50
End of 3rd.....	1.50

At the end of the first, second, or third quarters, a student whose average is less than 1.50 will be placed on probation. A student who is on probation cannot carry more than 14.0 quarter hours per quarter. A student whose cumulative average is less than 1.50 at the end of the third quarter in residence will be suspended.

Quarter	Cumulative Grade Point Average
End of 4th.....	1.80
End of 5th.....	1.80
End of 6th.....	1.80

At the end of the fourth, fifth, or sixth quarters, a student whose average is less than 1.80 will be placed on probation. A student who is on probation cannot carry more than 14.0 quarter hours per quarter. A student whose cumulative average is less than 1.80 at the end of the sixth quarter in residence will be suspended.

Quarter	Cumulative Grade Point Average
End of 7th.....	1.90
End of 8th.....	1.90
End of 9th.....	1.90

At the end of the seventh, eighth, or ninth quarters, a student whose average is less than 1.90 will be placed on probation. A student who is on probation cannot carry more than 14.0 quarter hours per quarter. A student whose cumulative average is less than 1.90 at the end of the ninth quarter in residence will be suspended.

Quarter	Cumulative Grade Point Average
End of 10th.....	2.00
End of 11th.....	2.00
End of 12th.....	2.00

At the end of the tenth, eleventh, or twelfth quarters, a student whose average is less than 2.00 will be placed on probation. A student who is on probation cannot carry more than 14.0 quarter hours per quarter. A student whose cumulative average is less than 2.00 at the end of the twelfth quarter in residence will be suspended.

COURSE EXAMINATIONS

Regular Examinations

Examinations are required in all courses. Final examinations are held for a two-hour period at the end of each quarter, and at the end of each summer term.

Absence from Final Examination

Absence from the final examination will be indicated by a mark of (x). If the student's grades are of passing quality up to, but not including, the final examination, he shall receive a grade of "Incomplete" "I" for the course; if, however, the performance is of failing quality up to the final examination, a grade of "Failure" "F" will be awarded.

A senior who has received a grade on Incomplete in any subject must remove the incomplete grade three weeks prior to commencement.

Issuance of Grades

After the close of each quarter, the grades of the student will be sent to the parents or guardians and to the major adviser. The student may obtain a copy

of the grade report by presenting his assessment card at the Office of the Registrar.

Issuance of Transcripts

At the beginning of the senior year, a photostatic copy of the student's entire record will be sent to the major adviser.

The student may obtain a copy of his transcript by paying the required fee of \$1.00.

To be official, a transcript must bear the seal of the University. Official transcripts are not given to students or alumni, but are mailed directly to the institution or persons considering the applicant for admission or employment.

CLASSIFICATION OF STUDENTS

All students of the University must be classified in one of the following categories:

Freshmen: Those who have completed less than 48 quarter hours.

Sophomores: Those who have completed at least 48 quarter hours but less than 96 quarter hours.

Juniors: Those who have completed more than 96 quarter hours but less than 144 quarter hours and have earned an average of "C" (2.00) in all work taken.

Seniors: Those who have completed 144 quarter hours or more and have earned an average of "C" in all work taken.

Engineering Majors

Sophomore 58 quarter hours

Junior 116 quarter hours

Senior 172 quarter hours

Specials: (a) Those who meet entrance requirements and wish to pursue particular studies but not to qualify for a bachelor's degree. Such students may be admitted with the permission of the Registrar. (b) Those who are twenty-one years of age and who have not completed four years of high school work may enroll in such courses as they are prepared to take.

Unclassified: Those whose records are transferred from a non-accredited college.

Graduate Students: Those who have received college degrees from accredited institutions and who have been admitted to the Graduate School.

Definition of a Quarter Hour

A quarter hour: One hour of recitation once a week for twelve weeks equals one quarter hour.

WITHDRAWAL FROM THE UNIVERSITY

To withdraw from the University, the student must make application on forms provided by the Office of the Dean of Students. The responsibility of filing for official withdrawal from the University rests with the student.

A student may withdraw from the University no later than ten calendar days prior to the beginning of final examinations in any quarter (or term).

UNIVERSITY REQUIREMENTS FOR A BACHELOR'S DEGREE

A bachelor's degree is conferred on a student who satisfactorily completes a curriculum in one of the departments. The candidate for a bachelor's degree must satisfactorily complete each of the general requirements of the University as listed below:

1. The minimum University requirement for graduation is 192 quarter hours with a minimum average of "C" (2.00).

2. A minimum of 66 quarter hours must be completed in 300 and 400 level courses.
3. The number of quarter hours per quarter should be 1/12 of the total number of hours required for graduation.
4. A minimum of 36 quarter hours must be offered for a major with a minimum of 15 quarter hours in courses on the 300 and 400 levels.
5. Six quarters of required activity courses in Physical Education.
Note: These courses should be completed satisfactorily during the freshman and sophomore years. (This requirement is waived for veterans but no credit is awarded.)
6. Nine quarter hours of English.
7. Three quarter hours of Mathematics.
8. Nine quarter hours of American History for all students who do not present a year of American History on their high school transcripts.
9. Nine quarter hours of Social Studies.
10. Two years of basic Air Force ROTC (for male students).
11. Any departmental requirements.
12. A Junior English Proficiency Examination.
13. A Senior Project.
14. All candidates for the bachelor's degree must spend the senior or its equivalent (the last forty-eight quarter hours offered for the degree and the last nine months), in residence at this University.
15. Transfer students must spend at least one academic year in residence at the University and earn while in residence not less than forty-eight quarter hours of credit with a minimum average of "C" (2.00).

The Junior English Proficiency Examination

Candidates for the bachelor's degree are required to pass a test in the use of simple expository English. The test is administered in the Junior year during the fourth week of each regular quarter and the third week of the first summer quarter.

Those who fail the test shall be required by the University to pursue further work until a satisfactory proficiency in English is demonstrated.

All undergraduate transfer students, regardless of classification, are required to pass the test before graduation.

The Senior Project

All candidates for a bachelor's degree must complete a senior project. The project may be a literary or laboratory investigation, a collection or a compilation. The outcome of the project must be written in the form of a junior thesis of not less than one thousand, nor more than three thousand words. It must be typewritten and organized according to the approved style used by the University.

Removal of Incomplete Grades

A graduating senior must remove all incomplete grades at least three weeks prior to commencement.

Degrees With Honors

The degree of Bachelor of Science or Bachelor of Arts with honors is awarded with distinction or with high distinction. To be graduated with distinction, the student must earn an average of at least 3.25. To be graduated with high distinction, the student's average must be not less than 3.50.

Application for Bachelor's Degree and Senior Status Forms

1. A candidate for a degree must file with the Office of the Registrar "Senior Status Forms" six months prior to the date of graduation. This must be approved by the candidate's major adviser, department head, Dean of the School, and the Registrar.

2. Forms for an "Application for Diploma" may be obtained by request at the Departmental Office and must be filed in triplicate in the Office of the Bursar after the signatures of the major adviser and Dean of the School are obtained.
3. The diploma fee must be paid and all accounts cleared at least two months prior to the date of graduation.
4. A clearance from the Placement Bureau and the Library must be filed with the Office of the Registrar one month prior to the date of graduation.

REQUIREMENTS FOR THE BACHELOR OF SCIENCE DEGREE WITH TEACHING CERTIFICATE**

General Education Core (Both Elem. and Secondary).....	60-66 qr. hrs.*
Professional Education Core (Both Elementary and Secondary).....	36 qr. hrs.
Area of Endorsement	18-54 qr. hrs.*
Other Hours.....	To total the quarter hour required by the University and departmental requirements.

REQUIREMENTS FOR THE BACHELOR OF SCIENCE DEGREE WITHOUT TEACHING CERTIFICATE

IN THE SCHOOLS OF EDUCATION AND ARTS AND SCIENCES

Liberal Arts Core.....	57 qr. hrs.
Major Field Core.....	36 qr. hrs.
Major Field Related Core.....	Qr. Hrs. as required by the department
Elective Core.....	Qr. Hrs. as required by the department

REQUIREMENTS FOR THE BACHELOR OF SCIENCE DEGREE WITHOUT TEACHING CERTIFICATE IN THE SCHOOL OF ENGINEERING

Two Year Common Curriculum.....	121 qr. hrs.
Engineering Major Curriculum....	Qr. Hrs. as required by the department

REQUIREMENTS FOR THE BACHELOR OF ARTS DEGREE

To qualify for the Bachelor of Arts degree, the student must (1) fulfill the general requirements for a bachelor's degree and (2) complete the following liberal arts courses:

English 101, 102, 103.....	9 qr. hrs.
World Literature 211, 212, 213.....	9 qr. hrs.
Foreign Language (9-27 hours)	18 qr. hrs.
Social Science	12 qr. hrs.
Natural Science	12 qr. hrs.
Mathematics	9 qr. hrs.
Philosophy, Music, Art, Drama.....	6 qr. hrs.
(combination of any two courses)	

and (3) complete a major program of studies in one of the following subjects: Biology, Chemistry, History, Mathematics, Sociology, Social Administration, Speech and Drama, English, Modern Foreign Languages, Geography, Physics, Political Science, Psychology.

Modern Foreign Language Requirement for The Bachelor of Arts Degree

The foreign language (French, German, or Spanish) requirement may be satisfied as follows:

- a. Students who present no (0) units of a foreign language in high school when they enter the University are to take twenty-seven (27) quarter hours of work in a foreign language, beginning with the freshman course in that language.

*Minimum quarter hours requirements.

**Home Economics Education and Agriculture Education excluded (course content and the curriculum are determined by the State Board of Vocational Education).

- b. Students who present two (2) units of a foreign language in high school and who desire to continue work in that same language may satisfy the language requirement by pursuing eighteen (18) quarter hours in that language, beginning with the sophomore course of that language.
- c. Students who present four (4) units of a foreign language in high school and who desire to continue work in that language may satisfy the language requirement by pursuing nine (9) quarter hours in that language, beginning with the junior course.

Proficiency Test in French, German, Spanish

Students who enter the University for the first time and who present two or more high school units in a foreign language may take a proficiency test in that language. A student's proficiency in a given language may alter the number of quarter hours required to satisfy the language requirement.

PROVISIONS FOR GRADUATE AND PROFESSIONAL EDUCATION FOR TENNESSEE STUDENTS

Veterinary Medicine

Under authority of Chapter 82, Public Acts of 1949, the State of Tennessee has entered into a contract, through the Board of Control of the Southern Regional Council on Education, with the Tuskegee Institute whereby Tuskegee agrees to enroll two qualified Freshmen students from the State of Tennessee each year who will pursue courses in Veterinary Medicine. A list of persons who are qualified and eligible for admittance to Tuskegee will be submitted to Tuskegee Institute by the President of Tennessee A. and I. State University. Therefore, persons who are interested in taking courses in Veterinary Medicine should write to President W. S. Davis, Tennessee A. and I. State University.

Medical and Dental Training

Under authority of Chapter 82, Public Acts of 1949, the State of Tennessee has entered into an agreement with Meharry Medical College, through the Board of Control for the Southern Regional Council on Education, whereby Meharry Medical College agrees to provide a quota of twelve places in the School of Medicine at the Meharry Medical College and five places in the School of Dentistry at the Meharry Medical College for students from the State of Tennessee to be selected from applicants certified by the Commissioner of Education. Persons who are citizens of the State of Tennessee and who wish to pursue courses in medicine or dentistry should apply to the Meharry Medical College for entrance in the School of Medicine or the School of Dentistry.

INFORMATION FOR VETERANS

Eligibility for Training

The new G. I. Bill for veterans who have served in the Armed Forces since June 27, 1950 is known as Public Law No. 550.

To be eligible, a veteran must be out of active service and must meet the following requirements: (1) he must have been discharged under conditions other than dishonorable; (2) he must have had active military duty since June 27, 1950; (3) he must have had at least 90 days' total service, unless discharged sooner for an actual service-incurred disability.

Admission

All veterans who are entering the University as new students must file an application one month prior to date of registration.

In order to expedite time in receiving subsistence checks, veterans are advised to contact their local Veterans Administration at the earliest possible date after

discharge to apply for educational benefits. If the veteran is eligible for training, he will receive a certificate of Eligibility, which he is advised to bring to the Office of Veterans' Affairs on the day of registration. Delay in submitting this certificate will cause a delay in receiving subsistence checks.

Final decisions on admission are made by the Registrar of the University. Veterans applying for college courses must have on file necessary scholastic records before applications may be approved. Approved applicants will be notified prior to date of registration.

Payment of Bills and Fees

Regular fees, including tuition, board and room, maintenance, and supplies are paid by veterans on the same basis as other students. These fees must be paid at the time of registration. War orphans who expect to receive subsistence checks as provided by the Government under Public Laws 634 and 674 must also pay all fees that are required of other students at the time of registration.

Class Load

A veteran must be registered for at least 14 quarter hours to be in full-time training and entitled to full education and training allowance.

A Public Law 550 veteran may be entered for a period longer than the normal school year and if he attends a summer session, a separate enrollment form must be submitted.

Change of Program

Public Law 550 does not permit more than one change of program in any case. If a course of training is discontinued for misconduct, neglect, or lack of application, the veteran may not be provided any additional educational benefits.

Class Attendance and Decorum

Veterans' training, conduct and progress must at all times, both on and off the campus, be maintained in a satisfactory manner, conforming to the ideals of the University.

Veterans are required by the Veterans Administration to attend classes regularly. All absences must be reported to the Office of Veterans' Affairs, whether the absence is because of illness or for some other good reason. When a veteran is absent three days in any thirty-day period without notice to the Office of Veterans' Affairs, the office is required on the third day to notify the Veterans Administration.

All veterans interested in entering Tennessee A. and I. State University should address all inquiries to:

Office of Veterans' Affairs
101 Industrial Building
Tennessee A. and I. State University
Nashville 8, Tennessee

GRADUATE SCHOOL

HUBERT B. CROUCH, Dean

CO-ORDINATORS OF GRADUATE STUDIES AND RESEARCH

Hazo W. Carter	.....	<i>Applied Sciences</i>
Calvin O. Atchison	.....	<i>Education</i>
Robert S. Cobb	.....	<i>Health and Physical Education</i>
Earl S. Sasser	.....	<i>Humanities</i>
George Hull	.....	<i>Natural Sciences</i>
Sherman N. Webster	.....	<i>Social Sciences</i>
Henry L. Taylor	.....	<i>Vocational Education</i>

GENERAL DESCRIPTION OF THE GRADUATE SCHOOL

HUBERT B. CROUCH, Ph.D., *Dean*

Historical Events in Graduate Work at the University

- 1941: Authorization of graduate study at Tennessee Agricultural and Industrial State College by the General Assembly of Tennessee.
- 1942: Organization of the Graduate Division and the Graduate Council under the direction of the Dean of the College. First graduate courses offered leading to the master's degree.
- 1944: First master's degree conferred—Business Education.
- 1951: Organization of the Graduate School and Executive Committee under the direction of a Chairman. State university status granted the institution by the State Board of Education.
- 1958: Reorganization of the Graduate School and Graduate Council. Appointment of the graduate Dean. Adoption of new standards for establishing and continuing graduate programs. University given Land-Grant status by the State Board of Education.

Purposes and Design of Graduate Study

Advanced studies leading to the master's degree are offered in several fields at the University. Each program is fully approved and meets all standards prescribed by the State Board of Education and the Southern Association of Colleges and Secondary Schools.

The purposes of graduate work at the University are to provide opportunities for creative advanced study on a broad base and for extending the boundaries of knowledge through original research. In order to achieve these objectives, the University has provided a well-trained and experienced faculty and the necessary facilities for investigative study and research.

Inasmuch as creative scholarship is the essence of graduate work, the student is expected to demonstrate many qualities beyond those generally required in undergraduate study. He must have an intellectual curiosity and an impelling desire to learn on his own initiative toward the full development of his potential as a scholar. He is further expected to be a mature and emotionally stable person who is fully capable of self-discipline at all times.

Much of the graduate work consists of reading specialized literature, designing approaches to problems, experimenting, compiling and interpreting data, and making reports. This kind of independent study requires a high degree of resourcefulness and certain moral and intellectual responsibilities. The student is expected to assume full responsibility for the rate of his progress and for the fulfillment of all requirements in his program.

Graduate instruction is usually conducted in small classes or seminars, and is less formalized than undergraduate instruction. Class assignments are usually centered around important issues or areas of investigation rather than around topical outlines of a given text. Performance is evaluated more upon the quality of current information from several sources than upon ability to memorize content.

Organization and Direction of Graduate Studies

Graduate studies at the University are under the general supervision of the Graduate School. The administrative personnel and assistants within the School include the Dean, the Graduate Council, and the Coordinators of Graduate Study and Research. The advisory personnel includes the Graduate Curriculum Supervisors, Major Advisers, and Guidance Committees. The functions of these individuals and committees in the student's program are described under the statement on "Advisement."

Teachers of graduate courses and advisers are selected from the general faculty of the University. Selections are based upon formal training beyond the

master's degree, productive scholarship, interest in research, and experience in graduate teaching. Instruction is under the general supervision of the departments that offer graduate work.

The pattern of curriculum organization on the graduate level differs in several respects from that of the undergraduate schools. For purposes of coordinating the work in related fields, graduate curricula are grouped into the seven areas of the *Applied Sciences, Education, Health and Physical Education, Humanities, Natural Sciences, Social Sciences, and Vocational Education*.

Each area has a Coordinator who is the representative of the Graduate School in working with the departments and Deans of undergraduate schools in curriculum and staff supervision.

Areas, Departments, Curricula and Degrees

The Graduate School offers the master's degree in the following concentrations:

Areas	Departments	Curricula	Degrees
Applied Sciences:	Animal Science	Animal Science	M. S.
	Plant Science	Plant Science	M. S.
Education:	Adm., Curr., & Inst.	Adm., and Sup.	M. Ed., and M. S.
		Elementary Ed.	M. Ed., and M. S.
		Sec., Sch., Inst.	M. Ed., and M. S.
	Art & Music Ed.	Music Education	M. Ed., and M. S.
		Business Education	M. Ed., and M. S.
	Psychology	Ed. Guidance	M. S.
		Ed. Psychology	M. S.
		Gen. Psychology	M. S.
	Science Education	Science Education	M. S.
	Health and Physical Education	Health and Physical Education	M. Ed., and M. S.
Humanities:	English	English	M. A.
	Romance Languages	Romance Languages	M. A.
Natural Sciences:	Speech and Drama	Speech and Drama	M. A., and M. S.
	Biology	Zoology	M. A., and M. S.
	Chemistry	Chemistry	M. S.
Social Sciences:	Social Sciences	History	M. A., and M. S.
Vocational Education:	Agricultural Education	Agricultural Ed.	M. Ed., and M. S.

Admission

REQUIREMENTS FOR ADMISSION

Graduates of this University or of other institutions having substantially the same requirements for the bachelor's degree are eligible to apply for admission to the Graduate School. All applicants who have qualified for an earned bachelor's degree and who desire to pursue advanced or special studies are required to apply for admission to the Graduate School. Those who plan to qualify for another bachelor's degree at the University should apply for undergraduate admission.

PROVISIONAL ADMISSION

All applicants approved for admission to the Graduate School for advanced studies toward the master's degree are granted *provisional status* until they are admitted to candidacy for the degree.

PROVISIONAL ADMISSION WITHOUT DEFICIENCIES

In order to be eligible for pursuing a full graduate program at first registration in the Graduate School, an applicant must have met the following undergraduate requirements:

1. Graduation with the bachelor's degree from a college which is fully accredited by the appropriate regional accrediting agency as recognized by the U. S. Office of Education.
2. Completion of a minimum of 180 quarter credit hours with a general average of at least 2.50 quality points (4-point system). However, a department reserves the right to require more than 180 undergraduate credit hours for full admission to its graduate program, if in the opinion of the curriculum supervisor more background is necessary.
3. Completion of an undergraduate course program substantially equivalent to that currently required for majors in the department.

Students in this category are required to pass the Graduate Record Examination during their first quarter of registration in the Graduate School in order to continue to take courses for graduate credit in the next quarter of registration. (See "Graduate Record Examination").

PROVISIONAL ADMISSION WITH DEFICIENCIES

Applicants may be considered for admission to the Graduate School with one or more of the following deficiencies:

1. Undergraduate college not fully accredited by the appropriate regional accrediting agency at the time the applicant was awarded the bachelor's degree.
2. Undergraduate average less than 2.5 quality points, but not less than 2.00 quality points (4-point system).
3. Undergraduate prerequisites in the graduate field of concentration indicating quality or quantity deficiencies.

Each of the foregoing deficiencies require additional undergraduate work as described under "Removal of Deficiencies."

SPECIAL ADMISSION

Applicants who hold the bachelor's degree and who wish to pursue studies in the University not leading to the master's degree are granted graduate *special status*. Credits earned by special students may not at any time be used to fulfill the requirements for the master's degree.

CONTINUATION

Students who enroll in successive quarters, or in the Spring quarter and succeeding Fall quarter, are regarded as being in continuous attendance; and therefore, are not required to file forms for the privilege of continuation.

Students who attend the University during summer sessions only, may file permits to register for the following summer without filing an application for readmission.

READMISSION

A student whose training has been interrupted for more than twelve months, or who has been enrolled at another institution since his last attendance at the University, or who has been dismissed from the University, must apply for readmission in order to become eligible for subsequent enrollment in the Graduate School. The application for readmission must be filed with the Registrar at least three weeks in advance of the anticipated readmission. Students who apply for readmission during registration may not expect to be enrolled during that regular registration period.

The University is not obligated to waive the late registration penalties when students apply for readmission after the deadlines published for making applications.

Application

Requests for application forms and other general information relative to admission should be sent to the Registrar of the University. The completed application form and transcripts of all college work taken at other institutions should be filed with the Registrar at least one month prior to enrollment. In order to allow sufficient time for the necessary communications, the applicant

should request the proper officials of other institutions attended to send transcripts to the Registrar of this University at least two months before the anticipated enrollment. Transcripts sent by applicants are not acceptable.

Immediately after receiving the completed application, the Registrar sends a letter of acknowledgment to the applicant. After all application materials are filed with the Registrar, final action of the application usually requires ten to fourteen days when school is in session. Application materials become the property of the University and are not returned.

Applications filed after the announced deadlines may cause delays in approval for enrollment and exact certain penalties required in late registration.

Advisement

Several members of the graduate faculty are assigned responsibilities for the guidance and advisement of each graduate student. *HOWEVER, THE STUDENT MUST ASSUME FULL RESPONSIBILITY FOR INITIATING ALL PROCEDURES NECESSARY FOR FULFILLING ALL REQUIREMENTS OF HIS CURRICULUM FROM HIS FIRST ENROLLMENT THROUGH GRADUATION.* Signatures of advisers on official forms do not exempt the student from any requirements stated in this *Bulletin*, except those approved on Form G-15. The step-wise procedures for fulfilling requirements are outlined in the statement of "Procedures for Fulfilling Requirements."

The advisory personnel and their functions in the graduate program are indicated in the following descriptions.

DEAN OF THE GRADUATE SCHOOL

The Dean is chiefly responsible for the administration of the Graduate School program. However, he may assist in the general advisement of students relative to orientation, requirements, standards, and special problems. He does not regularly advise students on such matters as departmental requirements, class schedules, hours earned or to be completed, and problems connected with the thesis or terminal problem. These matters should be referred to the major adviser.

The Dean also maintains a complete folder on each graduate student at the University. A student or his adviser may review its contents in the Office of the Dean upon request.

GRADUATE CURRICULUM SUPERVISOR

Each field of concentration leading to the master's degree has a Graduate Curriculum Supervisor. He is responsible for the general supervision of a graduate curriculum within a given department. Some departments have two or more graduate curricula. In such cases, each curriculum supervisor is responsible to the head of the department and the Dean of the Graduate School for the general supervision of graduate program.

MAJOR ADVISER

Each student enrolling in the Graduate School for the first time is assigned a major adviser who supervises the student's program of study. He is the most important member of the advisory staff. His approval is required on all official advisory documents concerning the student, and he should be consulted regularly for guidance in the fulfillment of the requirements for the degree.

GUIDANCE COMMITTEE

Concurrent with admission to candidacy, the student is assigned a guidance committee of three members. This committee supervises the thesis investigation of the candidate. The chairman is mainly responsible for directing the investigation; however, the final document must meet the approval of the other two members of the committee before it may be accepted by the Dean for the final oral examination.

COMMUNICATION OF ADVISEMENT INFORMATION

Routine advisement data generally originate with the major adviser. However, such data may also originate with other members of the advisory staff. Any advice

given the student regarding his requirements should be written on the appropriate forms of the Graduate School and communicated to the student, his major adviser, the curriculum supervisor, and the Dean of the Graduate School.

Registration

Who Should Be Registered

Any graduate student in good standing with the University who wishes to earn credit, fulfill time in residence, confer with advisers, use experimental equipment or the library during any registration period must be currently enrolled in the Graduate School. All registration must be completed during the regular registration periods at the University.

REGISTRATION OF NEW STUDENTS

Applicants who have received letters of acceptance to the Graduate School from the Registrar of the University should present same to the selected major department upon arrival at the University at the beginning of the regular quarterly registration. Applicants who have not received a letter of acceptance from the Registrar of the University should ascertain the status of their applications in the Office of the Registrar of the University.

Before attempting to enroll in courses, each new student should obtain his registration envelope and directions from the major adviser of the curriculum selected.

LATE REGISTRATION

Students allowed to register three or more days after the close of the regular registration period will be assessed a penalty fee of \$5.00.

Enrollment

FULL-TIME ENROLLMENT

A graduate student may enroll for a maximum of 15 graduate credit hours per quarter or during two consecutive six-week terms of a summer session. A maximum of nine graduate credit hours may be allowed during a six-week session of summer term. Enrollment in nine credit hours during a regular quarter is regarded as a minimum regular load, but the minimum class load in either six-week term may not be less than three credit hours.

A student may enroll for eighteen (18) undergraduate credit hours during a regular quarter, if no graduate credits are included. He may also enroll for a maximum of nine (9) undergraduate credits in a six-week period of the summer term, if no graduate credits are included. This does not reduce the maximum number of graduate credits that may be pursued during another six-week period.

The graduate load limitations must be observed when any graduate credits are included for a given registration period.

PART-TIME ENROLLMENT

Enrollment in less than nine (9) credits in a regular quarter is regarded as part-time attendance in the Graduate School. Teachers, school administrators, and others whose current employment require graduate work for promotions, or salary increases, are limited to six (6) credits per quarter in graduate study at the University. This includes all concurrent enrollments in other institutions.

Part-time enrollment for less than nine (9) credits during a regular quarter allows the following credits:

1. Enrollment for seven to eight credit hours during the regular school day allows three-fourth time in residence.
2. Enrollment for six credit hours during the regular school day allows one-half time in residence.
3. Enrollment for six or less credit hours in evening or Saturday courses, or less than six credit hours in regular school day courses, allows less than one-half time in residence.

CONCURRENT INSTITUTIONAL ENROLLMENTS

A student who is enrolled at this University may not also be enrolled at the same time in another collegiate institution, except by special approval of the student's major adviser and the Dean of the Graduate School. A total of all such credits may not exceed the maximums allowed full-time and part-time students enrolled at the University. Any credits earned at another institution without prior approval during any portion of the same period that the student is enrolled at this University will not be accepted at this University.

Class Work in Absentia

When the student's official assignment requires field studies, he must (1) be enrolled in the appropriate course or courses, (2) provide the major adviser with a prospectus of the field work, and (3) obtain approval from the major adviser and the Dean of the Graduate School to study in *absentia*. Otherwise, the student must spend the required time in residence study in order to receive quarter hour credits.

Credit for Writing Terminal Documents

Thesis Writing 512 and Project Writing 602 allow three credit hours each. Inasmuch as these activities are not regarded as regularly scheduled class periods, more clock hours are required because a great deal of non-directive individual student initiative is expected. The candidate is expected to spend at least six clock hours per week during a regular quarter in writing activities under the pre-arranged supervision of the guidance committee chairman or the project supervisor. In order to receive additional residence credit when not enrolled in other quarter-hour credit courses, the student must be enrolled also in Conference 600.

Conference 600 is a non-credit course in which a student must be enrolled to use the facilities of the University when he is not enrolled in credit-hour courses, or when he is seeking class-load credit in excess of that allowed in regular courses in which he is currently enrolled. By pre-arrangement with the major adviser and with the approval of the Dean of the Graduate School, the student must indicate on his quarterly course schedule the number of clock hours per week during a regular quarter that he expects to pursue research, or an investigation, or to write a terminal document. The ratio is one credit hour for each two clock-hours of supervised activity. The major adviser is required to report to the Dean of the Graduate School at the end of the quarter the clock hours that the student spent in these activities. Clock credits are allowed on the basis of the major adviser's report.

Students enrolled in six-week terms are required to double the clock-hours required for a regular quarter.

Outline of the Program of Study

During his first conference with the major adviser or soon thereafter, the student is expected to outline a tentative program of study for the master's degree. This program of study should include the name of the degree sought; the graduate courses and hours to be completed; foreign language requirements, if any; undergraduate course deficiencies; and a tentative schedule for meeting all requirements. One copy of the program signed by the student and the adviser shall be filed with the Dean of the Graduate School within two weeks after the student is first enrolled in the Graduate School. Any changes in the program shall be recorded and filed with the Dean.

Changes in the Prescribed Curriculum

The student is expected to understand clearly all requirements that must be met in his curriculum. These requirements are outlined in this section of the University Bulletin under the titles "GENERAL REQUIREMENTS FOR THE MASTER'S DEGREE", and in the description of the curriculum in which the student expects to earn the master's degree.

Any deviations from the prescribed requirements as stated in this Bulletin must have the written approval of the major adviser and the Dean of the Graduate School. Oral agreements or approvals are not considered as sufficient grounds for claiming waivers of requirements.

Graduate Record Examination

Applicants who plan to qualify for the master's degree are required to achieve an acceptable score on the Graduate Record Examination during the quarter in which they first enroll in graduate credit courses. The Examination is administered by the Graduate School under the Institutional Testing Program of the Education Testing Service, Princeton, New Jersey.

The Examination is administered in order to determine the adequacy of the student's background for pursuing advanced studies. Those who fail to achieve an acceptable score on the Advanced Test will be required to take additional undergraduate work. (See "Removal of Deficiencies.")

Removal of Deficiencies

Applicants who are graduates of institutions not fully accredited and/or those admitted with less than 2.50 quality points will be required to complete 15.0 additional undergraduate credit hours in residence at this University with a minimum average of 3.00 quality points. Except by special permission of the Dean of the Graduate School, courses may not be taken for graduate credit during the removal of this deficiency. A maximum of two full quarters may be allowed for the removal to meet this requirement. Those who fail to maintain an average of 3.00 quality points in this undergraduate work, after two full quarters of study will be dropped from the Graduate School.

Those who fail to achieve an acceptable score in the Advanced Test of the Graduate Record Examination in one quarter will be required in the next quarter of registration to complete 15.0 additional undergraduate credit hours in residence at this University with a minimum average of 3.00 quality points. Except by special permission of the Dean of the Graduate School, courses may not be taken for graduate credit during the removal of this deficiency. Those who fail to maintain a 3.00 quality point average in this undergraduate work will be dropped from the Graduate School.

Students admitted to a department with prerequisite course deficiencies will be required to take the prescribed undergraduate courses the first time they are offered in the official University schedule and before enrollment in the advanced courses of the series.

GENERAL REQUIREMENTS FOR THE MASTER'S DEGREE

Resumé of Minimum Requirements for the Master's Degree

Requirements	Master of Arts	Master of Education	Master of Science
Total credit hours:	45	48	45
Credit hours in residence:	36	39	36
Minimum graduate level credits:	36	39	36
Transfer credits allowed:	9	9	9
Extension credits allowed:	0	0	0
Time in residence	3 quarters	3½ quarters	3 quarters
Minimum graduate average:	3.00	3.00	3.00
Foreign language:	French, German, or Spanish	None	Departmental option
Terminal document:	Thesis	Project	Thesis
Research requirements:	2 quarters	None	2 quarters
Final oral examination:	Required	None	Required
Book-binding of terminal document:	Required	None	Required
Copies of terminal document required:	4	3	4
Time limitations:	6 years	6 years	6 years

Admission to Candidacy

Admission to the Graduate School does not imply that the student is a candidate for the master's degree. Admission to candidacy for the degree requires (a) the completion of at least 15 graduate credit hours in residence with a minimum average of 3.00 quality points, (b) the achievement of an acceptable score on the Graduate Record Examination, and (c) the removal of all undergraduate admission deficiencies (See "Removal of Deficiencies").

Students who plan to qualify for the Master of Arts degree must pass a foreign language reading knowledge examination before they may be admitted to candidacy for the degree.

Graduate Credit Hours

Candidates for the Master of Arts and Master of Science degrees are required to complete a minimum of 45 graduate credit hours, thirty-six of which must be taken in courses numbered 500 or above.

Candidates for the Master of Education degree are required to complete a minimum of 48 graduate credit hours, thirty-nine of which must be taken in courses numbered 500 or above.

Nine credit hours within the above programs may be selected from the undergraduate courses approved for graduate credit as listed in each graduate curriculum. An undergraduate course taken before the student is admitted to the Graduate School may not at any time be counted in the requirements for the master's degree.

Residence

Candidates for the Master of Arts and Master of Science degrees are required to spend three full quarters or equivalent summer terms of graduate study in residence at the University. Candidates for the Master of Education degree are required to spend three and one-half full quarters or equivalent summer terms of graduate study in residence at the University. Acceptance of transfer credits may not reduce the time required in residence.

Scholarship Standards

The minimum acceptable standard for graduate work is 3.00 quality points ("B"). A student who fails to maintain a minimum average of 3.00 after two full quarters of study will become ineligible to continue studies at the University toward the master's degree. Upon proof of the intervention of unusual circumstances, the Dean of the Graduate School may grant such a student the privilege of continuing his studies for a limited period to remove scholarship deficiencies.

Competency in Communication

Graduate students are expected to be highly competent in all of the fundamental communication skills. Those who demonstrate weaknesses in these skills may be required to take an English proficiency test and remedial courses, should the test so indicate the need.

Kinds of Credits Allowed

Only those graduate credits earned in residence at the University or another fully accredited institution may be used to fulfill the requirements for the master's degree. Evening and Saturday courses offered at the University allow residence credit. No graduate credits are allowed through correspondence or extension courses.

Transfer of Credits

A maximum of nine quarter hours of graduate courses work may be transferred from another institution. Such credits must be earned in residence at a

fully accredited institution which offers the master's degree, and they must be acceptable by the major adviser and the Dean as reasonable substitutes for courses required in the student's major curriculum at this University.

Undergraduate Courses for Graduate Credit

All undergraduate courses approved for graduate credit are listed in the descriptions of the respective graduate curricula. No limitations are placed upon the numbers of such credits that may be allowed in the student's program; provided that at least 36 credit hours are earned in courses numbered 500 or above for the Master of Arts and the Master of Science degrees, and at least 39 credit hours are earned in courses numbered 500 or above for the Master of Education degree. The courses selected must fit into the pattern of the curriculum. Courses once counted toward the requirements for the bachelors degree may not be counted or repeated for graduate credit.

Limitations on Graduate Courses Taken by Undergraduate Students

Graduate courses may not be taken for undergraduate credit. A student who is in his final quarter of undergraduate study at this University may enroll in graduate courses for a maximum of 9 credit hours, provided that his total class load for the quarter does not exceed 15 credit hours. The student must also have a cumulative average of at least 2.50 quality points in order to be eligible for enrolling in graduate courses. Such credits may not reduce the minimum time required in residence after full admission to graduate study. In order to enroll in graduate courses, the student must obtain the approval of the Graduate Curriculum Supervisor in the field where the courses are offered and the Dean of the Graduate School. Form G-3 of the Graduate School is required for this purpose.

Time Limitations

All requirements for the master's degree must be completed within six calendar years. Work completed any time during a calendar year will expire on December 31st., of the sixth calendar year. Required courses which are allowed to expire must be repeated by regular class enrollment and class attendance for the full term of the course. Expired course credits remain on the permanent record, but they are not included in computing the average.

Many thesis problems, particularly surveys and status studies, may become obsolete within a relatively short period of time. In such cases, the student's guidance committee and the Dean are privileged to reject a study that is out-of-date.

Repeating Courses

Graduate courses may be repeated. However, the previous grades awarded will remain on the permanent record. Only the last grade earned in a course that is repeated will be included in computing the average.

Major-Minor Programs

A major program with a minor concentration must include at least 27 graduate credit hours in the major field and not less than 18 hours in one field as a minor.

Not more than 6 approved undergraduate credits may be allowed in either the major or the minor area. But the total in both fields may not exceed 9 credits within a 45 or 48 credit hour program.

Class Meetings and Attendance

Regular classes are conducted from 8 A.M., to 5 P.M., each day—Monday through Friday; and from 8 A.M., to 12 Noon on Saturday. Evening classes are conducted from 6 P.M., to 9 P.M., each day—Monday through Friday. Saturday classes are conducted from 9 A.M., to 12 Noon.

Regular lecture courses meet one hour on alternate days. Courses with

laboratory periods meet daily with lectures and laboratories held on alternate days. Evening classes meet for one and one-half hours twice each week. Saturday classes meet three consecutive hours each week.

Graduate students are expected to attend all class meetings of each course. Penalty grades may be awarded for non-attendance. The student is held responsible for meeting all requirements of each course. Late registration and absences from classes do not constitute valid reasons for any waivers or exemptions.

Evening and Saturday Classes

Evening and Saturday classes are conducted on the campus of the University during the regular school term in order to provide opportunities for full-time employed persons to earn credits toward the master's degree. Regularly enrolled students may register in these programs only by special approval of the major adviser and the Dean of the Graduate School.

Students enrolled in these programs must meet the same qualifications and follow the same advisory procedures as required of regularly enrolled graduate students.

Research and Thesis

A candidate for the Master of Arts or the Master of Science degree is required to write a thesis based upon research investigation conducted independently by the candidate. The problem must be outlined on Form G-9 or the form adopted by the department and submitted to the Dean of the Graduate School at least two quarters of study prior to graduation. A student may not be graduated during the same quarter in which he is registered for Thesis Writing 512. Standards for research and thesis writing may be obtained from the Dean of the Graduate School.

Seminar and Terminal Project

A terminal project is required for the Master of Education degree.

Candidates are required to enroll in Educational Project Seminar 601 at least one quarter prior to graduation. Educational Project Seminar 602 may be taken during the final quarter of registration in which the terminal project is completed. Standards for the terminal project may be obtained from the Dean of the Graduate School.

Language Requirements

A reading knowledge of a foreign language is required for the Master of Arts degree. Inasmuch as the use of foreign language literature may be required in the readings and research of the student, this examination should be taken at first opportunity before the request is made for admission to candidacy for the degree. Examinations are available in French, German and Spanish.

Ordinarily, the student should present at least two years of the selected language taken on the college level. Those who fail the examination may be required to take additional courses in the foreign language before they may obtain approval for repeating the examination.

Application for the Degree

After a candidate has earned at least 30 graduate credit hours, he should file an application for the master's degree with the Dean of the Graduate School at least one month before making application for the final oral examination.

Terminal Requirements for the Master of Arts and Master of Science Degrees

Candidates for the Master of Arts and Master of Science degrees are required to pass a comprehensive final oral examination. This examination must be taken either after all other requirements have been met or not earlier than the final weeks of enrollment at the University.

THE FINAL ORAL EXAMINATION

In order to obtain approval for the final oral examination the following requirements must be met:

1. The application signed by the major adviser shall be filed with the Dean of the Graduate School at least two weeks in advance.
2. The candidate shall have completed all course requirements or be currently enrolled in the last courses required for the degree.
3. All grades of incomplete (I) except for Thesis Writing 512 shall be replaced with permanent grades before the application for the final oral examination is submitted to the Dean.
4. The major adviser shall submit along with the application an official copy of the candidate's transcript indicating the courses to be included in the requirements for the degree, and that the candidate has maintained a minimum average of 3.00 quality points.
3. The student shall submit to the Dean of the Graduate School four copies of the thesis and seven copies of the abstract at least five days before the final oral examination.

Financial Clearance

In order to obtain clearance for the final oral examination, the following fees must have been paid to the cashier of the University:

1. All charges against the candidate's account in the Business Office.
2. Diploma fee.
3. If not currently registered, an examination fee of \$15.00.
4. All book and library charges assessed by the University Librarian.
5. Binding fee or a receipt from an approved bindery showing that the candidate has deposited the cost of binding three copies of the thesis.

Reporting for the Examination

Before the beginning of the examination, the candidate shall present to the chairman of the examining committee receipts showing that all financial obligations have been paid according to the foregoing schedule of charges.

Conduct of the Examination

The examination is conducted for a minimum of two full hours. Ordinarily, the first ninety minutes of the period are devoted to the examination of the final document and general discussions. The remaining time is devoted to the candidate's advanced educational background. The examiners shall indicate their judgments independently without the benefit of the opinions of other examiners. At least five affirmative judgments are required before the candidates may be approved for graduation. The chairman of the examining committee shall submit to the Dean the decisions of the examiners along with written notations of further requirements, if any.

CORRECTIONS AND REVISIONS OF FINAL DOCUMENT

All recommended changes in the final document shall be made by the candidate under the supervision of his major adviser; and the required copies of same, signed by each member of the guidance committee, shall be submitted to the Dean at least fifteen days before commencement.

BINDING THE THESIS

Four copies of the thesis shall be bound in book binding by a commercial binder to conform to the standards of the previously bound copies of thesis at the University. The candidate may either have these copies bound and submit the copies of the same to the Dean of the Graduate School at least fifteen (15) days before commencement or he may pay the binding fee to the University Cashier. In the latter case, the University will assume full responsibility for the binding and distributing of copies.

Terminal Requirements for the Master of Education Degree

During the final period of enrollment, the candidate is required to write a terminal project under the supervision of the teacher in charge of Project Writing 602. Two copies of the typed and loose-leaf bound project must be approved by the project supervisor (the teacher, in most cases) and the major adviser. The grade for project writing must be entered on the candidate's permanent record in the Registrar's Office at least fifteen (15) days before commencement day. However, the grade for Project Writing 602 will not be awarded until the final copies of the project have been approved. The original copy of the project shall be filed with the major adviser.

In order that the candidate may be cleared in the Office of the Graduate School for the award of the Master of Education degree, he must:

1. Execute Form G-10 "Application for the Master's Degree", and obtain the signatures of the major adviser and the Dean of the Graduate School.
2. Submit Form G-10 to the University Cashier for signature after the payment of all fees.
3. Submit Form G-10 to the Registrar for signature indicating that all financial obligations have been met, and that the candidate is approved in that Office for graduation.
4. Submit Form G-10 to the Dean of the Graduate School with all required signatures at least fifteen days before commencement day.
5. Submit Form G-13 "Course Standing for Graduation", signed by the major adviser, to the Dean of the Graduate School at least fifteen days before commencement day.

Scholarship Standards

Students whose graduate averages fall below 3.00 quality points after earning 30 or more graduate credit hours may be requested to withdraw from the Graduate School at the end of quarter or six-week term in which the average deficiency occurs. Such persons shall not be eligible for continuation solely because they may be pre-registered for the ensuing quarter. Students who have once received letters of scholarship warnings, or those whose performance may be at the minimum level required for graduate students, should not pre-register; nor should they attempt to register in the next quarter or term before receiving the approval of the Dean of the Graduate School. Students who enroll in the next quarter or term without the expressed approval of the Dean of the Graduate School will be requested to withdraw from the Graduate School.

DESCRIPTIONS OF GRADUATE PROGRAMS

Curricula leading to the master's degree are grouped in alphabetical order within their respective Areas. All undergraduate courses approved for graduate credit are listed by numbers and titles in this section of the *Bulletin*. Full descriptions of these courses may be found in the appropriate undergraduate sections of this *Bulletin*.

GRADUATE AREA OF THE APPLIED SCIENCES

HAZO W. CARTER, Ph.D., Coordinator

Major concentrations leading to the Master of Science degree are offered respectively in Animal Science and Plant Science. Each curriculum requires 45 graduate credit hours and a thesis. A minimum of 27 graduate credit hours must be taken in the major area and 18 graduate credit hours may be selected in another field, preferably in the related area of the undergraduate major.

Department of Animal Science

The Department offers a major in Animal Science and courses for graduate students in related areas. The descriptions of courses from which a major concentration may be selected are listed below.

ROLAND NORMAN, Ph.D.
Head and Graduate Curriculum Supervisor

Undergraduate Courses Approved for Graduate Credit

- Animal Husbandry 401. Market Milk. (3)
Animal Husbandry 403. Dairy Farm Operations. (3)
Biochemistry 402-3. General Biochemistry. (3)
Biochemistry 423. Seminar in Biochemistry. (1)

GRADUATE COURSES

501. *Advanced Animal Feeding*. (3) Devoted to studies of recent developments in animal nutrition, experimental procedures and application in commercial feeding. Prerequisite: Animal Husbandry 311 or equivalent. Two lectures and one laboratory period.

502. *Animal Feeding Problems*. (3) The student is expected to conduct an original feeding trial with one class of farm animals for at least 60 days, record, interpret and present results in written form. One lecture and two laboratory periods.

503. *Animal Health*. (3) Devoted to a study of the health maintenance, sanitary practices and research in livestock diseases and parasites. Two lectures and one laboratory period.

511-12. *Research and Thesis Writing*. (6)

513. *Advanced Livestock Management*. (3) Provides an opportunity for the student to receive advanced training in the care and management of purebred herds, commercial herds, and herd development. Prerequisites: Animal Husbandry 103-303-311 or equivalents. Two lectures and one laboratory period.

521-22-23. *Animal Husbandry Seminar*. (3) Discussion of current literature in animal husbandry as presented in scientific journals.

531. *Advanced Animal Breeding*. (3) A study of the special problems in the field of animal genetics as applied to the breeding and improvement of farm animals. Two lectures and one laboratory period.

532. *Dairy Plant Management*. (3) Problems of dairy plant management including labor union relationships, plant layout, design, procurement, marketing and sale of dairy products.

533. *Technical Control of Dairy Products*. (3) A course designed to familiarize the student with analytical methods of quality control. Prerequisites: A. H. 401, Biochemistry 312, Biology 241. One lecture and two laboratory periods.

600. *Conference*. No credit. Required for the removal of the grade of "Incomplete" in Thesis Writing 512 and for the privilege of using the facilities of the University when not enrolled in regular credit courses.

501-2. *Advanced Poultry Genetics*. (6) A study of the principles of genetics with emphasis on their application to plants and animals. Three lectures.

532. *Poultry Problems*. (3) Offered any quarter by arrangement.

512. *Thesis Writing*. (3)

503. *Advanced Poultry Nutrition*. (3) History of nutrition, chemistry and physiology of nutrition and the nutritive requirements for growth, production, and other body functions of the domestic fowl. Two lectures and one laboratory period.

511-12-13. *Poultry Seminar*. (3) Reports of assigned reading from scientific and technical literature on nutrition, disease, and breeding. One meeting per week.

531. *Advanced Poultry Management*. (3) Deals with the influence of recent investigations in poultry husbandry as they affect methods of feeding, housing, breeding, care, and management of poultry. Two lectures and one laboratory period.

Department of Plant Science

FRED E. WESTBROOKS, Ph.D., *Head and
Graduate Curriculum Supervisor*

The Department offers a major in plant science and courses for graduate students in related areas. The program is developed as an outgrowth of a well-organized undergraduate curriculum. Its primary aims are to give the student a sound scientific background in soil and plant science according to current knowledge in the field, and to provide broad basic training for students in the allied and supporting sciences.

Students admitted to the program without sufficient undergraduate training for a full graduate program of study will be given opportunities to strengthen their basic course work in this and other departments.

Undergraduate Courses Approved for Graduate Credit:

Agronomy 402. Advanced Soil Fertility (3)

Agronomy 403. Legumes (3)

Horticulture 343. Propagation of Horticultural Plants (3)

GRADUATE COURSES

501. *Plant Breeding*. (3) A study of the methods, principles and results of plant improvement work; hereditary variation and the general principles of plant breeding. Prerequisites: Agronomy 201, Biology 101-2. Three lectures.

502. *Fiber, (Other than Cotton) Sugar, and Root Crops*. (3) A study of the distribution, characteristics and cultural requirements of flax, hemp, sugar cane, sugar beets, white and sweet potatoes. Prerequisite: Agronomy 302. Two lectures and one laboratory period.

503. *Soil Classification*. (3) Teaches the basis of soil classification, genesis and morphology of zonal soils of the United States. Emphasis placed on the important series of Tennessee. Prerequisites: Agronomy 202, 401. Two lectures and one laboratory period.

511. *Thesis writing*. (3) Methods of research.

512. *Thesis*. (3) Graduate students only.

513. *Advanced Plant Pathology*. (3) Basic concepts of diagnosis, cause and control of selected plant diseases. Two lectures and one laboratory period.

521-22-23. *Seminar*. (3) Provides opportunity for the discussion of current problems in Plant Science. Prerequisites: Plant Science 201-2 and permission of the instructor. One hour credit each quarter. One meeting per week.

531-32-33. *Plant Science Literature*. (3) Acquaints the student with the literature in Agronomy and Horticulture. One 2-hour period per week.

541. *Advanced Methods in Soil Analysis*. (3) Official quantitative methods of soil and plant analysis. Prerequisite: Agronomy 402. Three laboratory periods.

542. *Special Problems in the Agronomic Sciences*. (3) A study of the principles of soil fertility maintenance, new problems and their solutions, and new solutions to old problems in the agronomic sciences.

543. *Special Problems in the Horticultural Sciences*. (3) A study of new problems and their solutions, and new solutions to old problems in the horticultural sciences.

551. *Advanced Pomology*. (3) The development and performance of fruit plants as influenced by environment and production practices. Two field trips required. Two lectures and one laboratory period.

552. *Advanced Methods in Plant Analysis*. (3) Official quantitative methods of soil and plant analysis. Prerequisites: Agronomy 402. Three laboratory periods.

553. *Advanced Propagation of Horticultural Plants*. (3) A study of the methods of propagating horticultural plants including seedage, cuttage, and grafting of both economic and ornamental plants. Two lectures and one laboratory period.

600. *Conference*. No credit. Required for the removal of the grade of "I" in Thesis Writing (512) and Education 602 (Project Seminar), and for the use of the facilities of the University when the student is not enrolled in a regular credit course.

MINOR IN PLANT SCIENCE

501. *Plant Breeding*. (3).

502. *Fiber-Sugar and Root Crops*. (3).

503. *Soil Classification*. (3).

513. *Advanced Plant Pathology*. (3).

551. *Advanced Pomology*. (3).

553. *Advanced Propagation of Horticultural Plants*. (3).

GRADUATE AREA OF EDUCATION

CALVIN O. ATCHISON, Ed.D., *Coordinator*

Graduate concentrations leading to the master's degree are offered in several fields of education.

The Master of Education and Master of Science degrees are offered in:

Administration and Supervision

Business Education

Elementary Education

Music Education

Secondary School Instruction

The Master of Science degree is offered in:

Educational Guidance

Educational Psychology

Science Education

The Master of Arts and Master of Science degrees are offered in:

General Psychology

Inasmuch as the three kinds of degrees have different requirements, the student should determine early in his program which degree he plans to seek. Students who feel the need of advice in this connection should consult with Dr. Atchison in room 301A of the Education Building.

Department of Administration, Curriculum and Instruction

CHARITY M. MANCE, Ph.D., *Head*

The Department offers master's degrees in Administration and Supervision, Elementary Education, and Secondary School Instruction. In all curricula, the student must present at least 36 quarter hours in undergraduate education and the necessary prerequisites for courses on the graduate level. The major adviser may prescribe the completion of additional undergraduate courses to meet the required background for a full graduate program of study.

The student must present at least 36 quarter hours in undergraduate education and the necessary prerequisites for courses on the graduate level. The major adviser may prescribe the completion of additional undergraduate courses to meet the required background for a full graduate program of study.

CURRICULUM IN ADMINISTRATION AND SUPERVISION

H. S. BLANTON, Ed.D., *Supervisor*

Required and Elective Courses

Required:

Education 500 or 526	3
Education 502	3
Education 503	3
Education 505	3
Education 511	3
Education 512 (MS) or	
Education 601-602 (M.Ed.)	3 or 6
Education 564	3
Education 587	3
Psychology 501 or 502	3
Psychology 543	3

Total hours required 30 or 33

Electives:

(Select 15 quarter hours)

Education 524
Education 546
Education 551
Education 554
Education 561
Education 572
Education 573
Education 595
Education 596
Psychology 531
Psychology 532
Education 551
Spec. Educ. 465
Spec. Educ. 467
Spec. Educ. 471

CURRICULUM IN ELEMENTARY EDUCATION

M. D. WILLIAMS, Ed.D., *Supervisor*

Required and Elective Courses

Required:

Education 500	3
Education 511	3
Education 512 (MS) or	
Education 601-602 (M.Ed.)	3 or 6
Education 526	3
Education 527	3
Education 529	3
Psychology 501 or 502	3
Psychology 543	3
Sci Educ. 505	3
Math. 523	3

Total hours required 30 or 33

Electives:

(Select 15 quarter hours)

Education 473
Education 502
Education 514
Education 524
Education 534
Education 538
Education 546
Education 547
Education 548
Education 562
Education 564
Education 573
Education 587
Psychology 551
Spec. Educ. 465
Spec. Educ. 467
Spec. Educ. 471

Subject Matter Areas for Majors in Graduate Elementary Education

Elementary Education Majors who present the following courses in English and Speech may pursue a graduate minor of 15 credits in *Communications*:

Undergraduate Prerequisites—

English 101-2-3	9
English 211-2-3	9
Speech 201-2	6
Speech 323	3

Total 27

Graduate Minor in Communications—

English 421	3 or
English 422	(3)
English 451	3
English 501	3
English 581-2-3	9 or
Speech 501½-3	(9)

Total 18

Elementary Majors who present the following courses in history may pursue a graduate minor in *History*:

Undergraduate Prerequisites—

History 121-2-3	9 or
History 301-2-3	(9)
History 201-2-3	9
History 311	3
History 341	3 or
History 342	(3)
History 491	3 or
History 492	(3)

Total 27

Graduate Minor in History—

History 501-2-3	9 or
History 511-2-3	(9)
History 531-2	6

Total 15

CURRICULUM IN SECONDARY SCHOOL INSTRUCTION

J. L. MORRIS, Ph.D., *Supervisor*

Required and Elective Courses

Required:

Education 500	3
Education 511	3
Education 512 (MS) or	
Education 601-602 (M.Ed.)	3 or 6
Education 526	3
Psychology 501 or 502	3
Psychology 543	3

Total hours required 18 or 21

Electives:

(Select 9 quarter hours)

Education 473
Education 502
Education 525
Education 528
Education 534
Education 573
Psychology 532
Spec. Educ. 465

Select 15 or 18 Graduate Credit Hours in the subject field of the undergraduate major or minor for the content area.

Undergraduate Courses Approved for Graduate Credit

- Special Education 465. (3) Introduction to Special Education.
- Special Education 467. (3) Characteristics and Needs of the Mentally Retarded.
- Special Education 471. (3) Methods and Materials for Teaching the Mentally Retarded Child.
- Education 473. (3) Audiovisual Aids in Education.

Graduate Courses

- 500. *Foundations of Education* (3) A critical analysis is made of the sociological, psychological, philosophical, and ethical foundations of education.
- 501. *Educational Statistics*. (3) See Psychology for course description.

See Psychology for course description.

502. *Advanced Statistics*. (3) See Psychology for course description.

502. *School Administration*. (3) Includes the following areas: (a) Public school administration, (b) Public school supervision, (c) Public school finance, (d) Curriculum development, (e) Survey technique, (f) Public relations, (g) Planning, construction, operation and maintenance of school buildings, (h) School transportation, (i) History and philosophy of education, (j) Educational sociology, and (k) Teachers salaries.

503. *School Supervision*. (3) Problems of administrative organization and relationships, financial control and assistance, legislative and regulatory standards, and various types of supervisory service are studied. The history of supervision is traced, its background is sketched, and details concerning the methods now in use are described. Techniques for problem solving by the group process are explored.

505. *Legal Basis for Public School Organization and Administration*. (3) A Study is made of legal principles that relate to such matters as authority, responsibility, and liability of school boards; districts, state and federal organizations. The legal status of principals and teachers are considered. The present interpretation and application of the school laws of Tennessee are examined.

505. *Problems in Science for Elementary Teachers*. See Science Education for Course description.

511. *Methods of Research*. (3) A study and practical exploration of the techniques of research. A critical analysis is made of the various types of research and the various manuals of acceptable styles for writing data.

512. *Thesis Writing*. (3) This course involves the writing of a thesis. The adequate set-up of the problem, the collection of data, their use, and conclusions to be reached are emphasized.

514. *Principles of Teaching*. (3) Critical survey of elementary and secondary education; current trends, administration, pupil guidance, teaching methods and evaluation.

520. *Curriculum Construction in the Elementary School*. (3) Designed for teachers and administrators who desire to study newer curriculum practices and needed changes in selection and organization of curriculum content.

523. *Math. Advanced Course in Teaching of Arithmetic*. (3) A study of methods and materials used in teaching arithmetic in the elementary grades. Emphasis is placed on methods leading to mathematical understanding, methods of teaching computational skills and applications in quantitative problems of everyday living.

524. *History of Education*. (3) This course offers a critical examination of the social and educational experiences which have greatest significance in explaining present educational policies, practices and institutions.

525. *Problems in Secondary Education*. (3) Considers secondary school problems in the fields of curriculum materials and patterns, general techniques and evaluation of the outcome of instruction.

526. *Philosophy of Education*. (3) A critical examination of the purpose of education in our elementary and secondary schools and the bearing of this purpose on problems of organization and administration, the selection of subject-matter, and classroom practice. Consideration will be given to the significance of our educational purpose and practice to our concept of a democratic society.

527. *Advanced Course in Social Studies for Teachers*. (3) This course is designed for students who desire to explore the newer practices and materials existing in the social studies program of the elementary schools. It offers the individual student an opportunity for creative expression and directed study in areas of need and interest.

528. *The Junior High School*. (3) Designed for students who are looking forward to securing teaching positions in the junior high school and for in-service

teachers who would like to concentrate their work around the problems of instruction, organization of materials, selection of materials, and evaluation of pupil growth.

529. *Advanced Course in Language Arts for Teachers*. (3) A study of the current trends and newer practices in the teaching of subjects which make up the language arts. It offers the individual student an opportunity for creative expression, and directed study in areas of need and interest.

534. *An Evaluation of Public School Programs*. (3) Designed to help the student analyze and interpret state, regional, and national public school evaluation programs. Consideration will be given to the intelligent use and interpretation of standardized and teacher-made tests and other procedures for collecting data aimed at the newer objectives of education.

537. *Evaluating the Elementary School*. (3) Offers a student the opportunity to construct and use the evaluative criteria for analyzing the total elementary school program or aspects of such programs of special interest and need to the individual student. Consideration of probable outcomes of the evaluative process is stressed.

538. *Basic Principles of Elementary Education*. (3) A critical analysis of child-centered and society-centered points of view in elementary education; purposes or values basic to a balanced, functional instructional program in the elementary school.

543. *Advanced Educational Psychology*. (3) See Psychology for Course Description.

546. *Organization and Administration in the Elementary School*. (3) Designed for administrators and teachers who desire to study purposes, practices, and trends in elementary school administration. The special areas include: the elementary school in the organization of the public school system; objectives of elementary education; school and community relationships; organization of the curriculum and pupil personnel work; evaluating various phases of the school organization and facilities; and research in elementary school organization.

547. *Current Issues, Trends and Practices in the Elementary School*. (3) Designed to give teachers, supervisors and administrators an opportunity to examine the current issues, trends, and practices in the elementary school as they refer to procedures, equipment and materials of instruction. Practical suggestions will be made to problems involving the improvement of instruction.

548. *Personnel Problems in the Elementary School*. (3) Emphasis on operation of groups in schools and communities stressing personnel policies and practices in schools and communities. Special consideration is given to pupil-teacher, teacher-principal, principal-staff problems and the interrelationships of these persons to each other and the community.

549. *Supervising the Elementary School*. (3) Designed to acquaint the students with organization and personnel factors in the elementary school with special emphasis on methods and techniques, problems, and practices of supervision. Attention is given to problems of human relations in the supervisory job.

551. *The Principal at Work*. (3) A systematic study and analysis of the work of a principal in a given school situation and of the possibilities for development of the school program and formulation of specific plans to foster such growth.

553. *The Supervisor at Work*. (3) Evaluation of program of work; program planning; report making; relation to superintendent; relation to community agencies; relation to school principals; professional activities for teachers; publicity.

554. *Group Dynamics*. (3) Designed to provide opportunities for pre-service and in-service teachers to gain experience in group organization, planning and evaluation, and to develop skills in group leadership and participation, recording, observing role playing, and interpretation of group interaction.

555. *Comparative Education.* (3) This course is designed to help students gain insight into the development of educational systems in other countries, and how various national groups induct the young into society. Using education in the United States as a convenient point of reference, the systems of educational operation, administration, finance and control of major nations will be comparatively studied. Some stress will be given to educational developments in South America, Canada as well as to the educational efforts of newer nations.

561. *Organization of School Staffs for Curriculum Improvement.* (3) Designed to provide opportunities for study of curriculum practices with special emphasis on the Tennessee State program of Curriculum Improvement and other representative patterns of over-all organization. Special curriculum improvement problems will be studied.

562. *Techniques of Teaching Reading in the Elementary School.* (3) A consideration of the modern trends in the teaching of reading techniques and materials for children on the primary, middle and upper grade levels.

564. *School and Community Relations.* (3) The relation of school and community in developing responsible citizens; awareness of the role of the local community on the national and international scenes; insights into social needs, processes and problems; effective use of the community and community resources in providing life experiences for developing citizens.

572. *Public School Finance.* (3) A consideration of the financial support of elementary and secondary education involving sources of income, methods employed in financing, and expenditures. The school finance problems of the local administrator is given special attention.

573. *Problems in Audio-Visual Education.* (3) Analysis of the development and function of audio-visual programs in schools. Includes problems of organization, selection and utilization of materials and equipment, unit costs, and school plant requirements. Some laboratory experience with equipment is required.

575. *Review of Research Studies in Elementary Education.* (3) Provides for a study of the emerging trends in education and their implications for elementary school teachers. A review of the best literature and research available in the field studied, with direct applications to elementary school problems.

587. *Curriculum Construction and Practices in the Public Schools.* (3) Critical appraisal is made of the development and present status of the elementary and secondary school curriculum policies and practices in terms of functional value and social needs; implications for reorganization and basic changes and trends. The team work of group process used in curriculum construction is critically studied.

595. *Curriculum Planning and Programming in the Elementary School.* (3) Designed for principals, supervisors and teachers who desire to become acquainted with the current procedures, practices and trends in curriculum planning and programming in the elementary school.

596. *Visiting the Teacher at Work and Improving Instruction.* (3) Designed primarily for elementary teachers, principals, and supervisors. The students are expected to visit and observe, along with the instructor, a teacher or teachers instructing children in as normal classroom situation as can be provided. The course work will be concerned with an evaluation of the classroom visitation and observation and suggested methods and materials for improving instruction.

600. *Conference.* No credit. Required for the removal of the grade of "I" in Thesis Writing (512) and Education 602 (Project Writing), and for the use of the facilities of the University when the student is not enrolled in a regular credit course.

601. *Education Seminar.* (3) This course consists of a survey of the current literature and subject matter in the major field. Required for the Master of Education degree in Administration and Supervision, Elementary Education, and Secondary School Instruction.

602. *Project Writing.* (3) This terminal course consists of writing a project centered around some problem in the area of the candidate's teaching or administrative responsibilities.

Department of Art and Music Education

EDWARD C. LEWIS, JR., Ph.D., *Head and Graduate Curriculum Supervisor*

The Department offers a curriculum leading to the Master of Education or the Master of Science degree in Music Education.

CURRICULUM IN MUSIC EDUCATION

The privilege of graduate study in the area of Music Education is open to those applicants who have satisfactorily completed a four-year curriculum in music and/or music education, and who meet all other requirements for admission set up by the University and the Graduate School. The purpose of the graduate program in music education is two-fold: to advance the fund of knowledge in the specific area of music instruction through scholarly research, and to broaden specific aspects of the art and science of teaching music through intensive study of established practices as well as new trends.

In addition to admission requirements set up by the University and/or the Graduate School, the Department expects that the following requirements be met by all students admitted to candidacy for the master's degree in music education:

1. The bachelor's degree earned by any prospective masters candidate must be substantially the same (in content and experiences required) as the undergraduate curriculum in music education at this University. Any differences in subject content must be construed as undergraduate deficiencies to be made up within the first several quarters of matriculation here.
2. Each student shall be expected to pass proficiency examinations in the following areas:
 1. Music theory
 2. Music history and literature
 3. Conducting
 4. Major and minor performance areas

Required and Elective Courses

The sequence of course work at the graduate level leading to the Master of Science degree in Music Education is divided into three categories as follows:

A. Core requirements in education		
Education	511—Methodology in Research.....	3
Education	502 or 503—Administration or Supervision.....	3
Education	526—Philosophy of Education.....	3
Psychology	501—Educational Statistics.....	3 or
Psychology	502—Advanced Educational Statistics.....	3
Psychology	543—Advanced Educational Psychology.....	3
Total		15
B. Core requirements in Music and Music Education		
Music	500—Intro. to Grad. Study in Mus. Ed.....	3
Music	506—Psychology of School Music Teaching.....	3
Music	501 or 510—Vocal or Instrumental Methods and Materials..	3
Music	525—Seminar in Music Education.....	3
Music	512—Thesis Writing in Music Education.....	3
Total		15
C. Electives in Music Education		

Candidates for the Master of Science degree in Music Education may elect the remaining fifteen (15) quarter hours of course work from the following four

groups of graduate courses in Music, Music Education, and Education with the provision that at least one course must be elected from Groups I, II, and III.

Group I—Music Education Electives

Music 524—Band Pageantry	3
Music 526—Seminar in Music Education.....	3
Music 527—Supervision and Administration of School Music.....	3
Music 501 or 510—Vocal or Instrumental Methods and Materials..	3

Group II—Music Theory Electives

Music 532—Advanced Theory	3
Music 533—Advanced Theory	3
Music 534—Harmonic Counterpoint	3
Music 428—Physics of Music.....	3
Music 420, 421—Form and Analysis.....	3 to 6
Music 430—Orchestration	3
Music 433—Composition	3

Group III—Musicology Electives

Music 507—The Symphony	3
Music 508—The Opera	3
Music 509—Twentieth Century Music.....	3

Group IV—Education Electives

Education 500—Foundations of Education.....	3
Education 514—Principles of Teaching.....	3
Education 524—History of Education.....	3
Education 573—Problems in Audio Visual Education.....	3
Candidates for the Master of Education degree are required to take Music 601 and 602 instead of Music 512.	

Undergraduate Courses Approved for Graduate Credit

Applied Music

41A, B, C. (6) Fourth Year Piano
42A, B, C. (6) Fourth Year Organ
43A, B, C. (6) Advanced Violin or Viola
44A, B, C. (6) Third and Fourth Year Voice
45A, B, C. (6) Third and Fourth Year Advanced Cornet
46A, B, C. (6) Third and Fourth Year Trombone
47A, B, C. (6) Third and Fourth Year Clarinet
48A, B, C. (6) Third and Fourth Year Flute
49A, B, C. (6) Third and Fourth Year Saxophone

Music Education

420-1 (6) Forms and Analysis
430 (3) Orchestration
428 (3) Physics of Music
433 (3) Composition

Graduate Courses

500. *Introduction to Graduate Study in Music Education.* (3) A concentrated survey of bibliographical material, current periodical literature, library resources, and research techniques applicable to graduate study in Music Education. Three lectures.

501. *Vocal Methods and Materials.* (3) A detailed study of vocal problems met in public schools; methods, materials and problems of organization. Also psychological and physiological problems in the teaching of voice production; diagnosis, breath control, resonance, diction; repertory and interpretation. Three lectures.

506. *The Psychology of School Music Teaching.* (3) The relationships of psychological research to practical applications in Music Education. The rela-

tionship of the learning process to music learning; executant factors in music education; evaluation, tests and measurements. Three lectures.

507. *The Symphony.* (3) The historical background of the growth and development of the modern symphony orchestra along with a critical study of the symphony. Listening and analysis of selected masterworks of symphonic literature. Three lectures.

508. *The Opera.* (3) A study of operas illustrating the basic types. A history and analysis of the operatic literature. Actual singing of scores and recorded music will illustrate the discussion. Three lectures.

509. *Twentieth Century Music.* (3) A study of the principal personalities and trends in music since 1900. An analysis of the form, style and idiom of modern music. Three lectures.

510. *Instrumental Methods and Materials.* (3) A detailed study of instrumental problems met in public schools; methods, materials and problems of organization. Discussions of financing, instrument testing, storage and repair; rehearsal technique; and other problems relating to the work of the instrumental director. Three lectures.

512. *Thesis Writing in Music Education.* (3)

524. *Band Pageantry.* (3) An intensive study of problems unique to the marching band, rudimentary technic of the drum major's baton; problems of cadence, alignment, and formations; selecting and scoring music for maneuvers and stunts. Three lectures.

525-26. *Seminar in Music Education.* (6) A survey of research studies and an evaluation of current methods in Music Education. Criteria for selection of materials and classroom procedure. Review and criticism of philosophies and curricula in music education. Three lectures.

527. *Supervision and Administration of School Music.* (3) An analysis and evaluation of principles, practices and trends in the organization, administration, and supervision of music education in public school system. Three lectures.

532-33. *Advanced Theory.* (6) Analysis of representative compositions of all major eras and in all major forms, and the application of the techniques observed. Three lectures.

534. *Harmonic Counterpoint.* (3) An intensive study of the contrapuntal style of Bach; the writing of three and four-part contrapuntal works employing techniques of the Baroque Era. Three lectures.

600. *Conference.* Students who are not enrolled in credit courses and who wish to use the facilities of the University for research, or thesis or project writing, are required to enroll in Conference 600.

600. *Conference.* No credit. Students who are not enrolled in credit courses and who wish to hold conferences with advisers or to use the facilities of the University for meeting the requirements for the master's degree are required to enroll in Conference 600.

601. *Music Seminar.* (3) This course is designed to survey the current literature in the field of music education. It is required for the Master of Education degree in music education.

602. *Project Writing.* (3) This terminal course consists of writing a project centered around a problem in music education. The finished product must meet the approval of the project supervisor in the course and the major adviser. Music Seminar 601 must be taken at least one quarter or summer term before enrollment in this course.

Department of Business Education

CECILLE E. CRUMP, Ed.D., Head and Graduate Curriculum Supervisor

The Department offers a curriculum in Business Education leading to a Master of Education or Master of Science degree.

The curriculum is designed to give instruction in the improvement of teaching in business subjects, to offer opportunity for guided research in experimental problems in the field, and to develop leaders in business education throughout the state and nation.

The program consists of courses which are of interest to (a) prospective teachers for business subjects, (b) business teachers in secondary schools, colleges, and universities who are interested in securing additional training or advanced degrees in the field of business education, and (c) school administrators and supervisors of business education programs.

Admission Pre-requisites: A student must have completed at least 45 quarter hours of undergraduate work in business with not less than a 2.5 general average to be admitted in good standing.

A minimum of the following credits or their equivalents must be present for regular admission to the department.

A minimum of the following credits must be present for regular admission to the department.

	Quarter Hours*
Typewriting	9
Shorthand	9
Principles of Business Education.....	3
Office Machines	3
Principles of Economics	9
Methods of Teaching Business Subjects.....	6-9
Student Teaching in Business Education.....	6-9
	<hr/> 45

*Equivalent is interpreted to mean teacher certification in the subject.

Requirements for the Master of Science Degree.—The Master of Science degree program has a dual purpose: one, to prepare teachers who wish to become research scholars, and the other to prepare specialists in any one of the combined areas of instruction in business education. There is a requirement for instruction and practice in research techniques. Thus, research and preparation for research (either basic or applied) are the fundamental justifications for the attainment of the Master of Science degree. A thesis is required.

The forty-five quarter hours may be distributed under two plans:

Plan A:

Educational Core Courses:

Ed. 511—Methodology in Research.....	3
Ed. 502/503—Administration or Superv.....	3
Ed. 526—Philosophy of Education.....	3
Psychology 543—Adv. Ed. Psychology.....	3
Psychology 502—Adv. Ed. Statistics.....	3

Total quarter hours..... 15

Major Field Courses:

*BE 501, or 502, or 503 Improved Methods.....	3 - 9
BE 504—Teacher Training	3
BE 521—Current Problems	3
BE 522—Tests & Measurements	3
BE 523—Guidance	3
*BE 524—Administration & Supervision.....	3
*BE 512—Research	3
BE 514—Experimental Problems	3
BE 400—Principles	3
BE 413—Curriculum Construction	3

Total quarter hours..... 15

* Required courses.

Minor, cognate or related field..... 15
(English, History, Speech, Guidance, Psychology, etc.)

Total hours required 45

Plan B:

Business Education and Administration.....	27
Educational core courses	15
Education elective	3

Total hours required 45

Requirements for the Master of Education Degree.—This curriculum offers professional training for expertness in programs, procedures, methods, and techniques in education; plus an understanding of the psychological and sociological bases of education. Less emphasis is placed on the mastery of research than required in the Master of Science program.

The required and elective courses to complete the forty-eight credit hour program are as follows:

Required		Electives
Core:		Education 500 3
Education 502	3	Education 503 3
Education 511	3	Education 514 3
Education 526	3	Education 524 3
Psychology 502	3	Education 525 3
Psychology 543	3	Education 528 3
		Education 534 3
Total Core Course Hours.....	15	Education 554 3
Business Education:		Education 564 3
Bus. Educ. 501-502-503.....	6	Education 573 3
Bus. Educ. 521.....	3	Education 587 3
Bus. Educ. 522.....	3	
Bus. Educ. 523.....	3	Total Selected Hours..... 9
Bus. Educ. 524.....	3	
Bus. Educ. 601.....	3	
Bus. Educ. 602.....	3	
Total Bus. Ed. Hours.....	24	Total Required Hours... 48

Undergraduate Courses Approved for Graduate Credit

Business Education 400. (3) Principles of Business Education.
Business Education 413. (3) Curriculum Development in Business Education.

Graduate Courses

BE 501. *Improvement of Instruction in Shorthand and Typewriting.* (3) For experienced and prospective teachers of typewriting, shorthand, and related office practice. Materials of instruction available to teachers presented and methods of developing original materials considered and applied through lectures, demonstrations, outside reading, and reports. Course may be sub-divided as A and B.

BE 502. *Improvement of Instruction in Office Practice.* (3) The organization of materials and records used in office practice and office machines courses. Course objectives: teaching techniques, achievement standards, curricula, pupil and testing evaluation. Concurrently, the ability to operate the more common business machines is developed.

BE 503. *Improvement of Instruction in Bookkeeping, Accounting, and Related Subjects.* (3) Important problems and procedures in the mastery of bookkeeping and related office knowledge and skills from the standpoint of the teacher. Includes materials, tests, standards, and teaching procedures. Teaching problems of students emphasized.

BE 504. *Teacher Training in Business Education.* (3) The improve-

ment of teacher training programs for Business Education: recent trends; significant problems; suggested training patterns, and teacher aids and materials.

BE 512. *Research in Business Education.* (3) Completion of the required thesis.

BE 514. *Special Experimental Problems in Business Education.* (3) Designed for students who wish to do a special research problem of a classroom nature in addition to the thesis.

BE 521. *Current Problems in Business Education.* (3) Significant problems as evidenced by the study and evaluation of the current literature considered. The course develops a better understanding of the underlying factors of business education problems, enabling the student to deal with them more effectively. Particular attention given to specific problems of members of the class.

BE 522. *Tests and Measurements in Business Education.* (3) Study of recent tests in commercial education; achievement, instructional predictive, and diagnostic. Evaluation and rating of tests; construction of objective tests.

BE 523. *Guidance in Business Education.* (3) Principles, problems and programs of guidance in business education. Participants will be required to design guidance programs for specific school situations.

BE 524. *The Administration and Supervision of Business Education.* (3) Deals with administration and supervisory problems; departmental organization; pupil records; rendering service to administrative officers and other school departments; guidance in business education; tests and measurements; placement and follow-up; equipment; in-service training of teachers; new materials; current publications; state and national testing program.

BE 541. *Seminar in Advanced Economic Theory.* (3). Readings, independent investigations, reports and critical discussions of debatable topics in the field of economic theory. An intensive study of selected writings of modern economists, particularly in the areas of value, distribution, and price theory.

BE 542. *Seminar in Monetary and Banking Policy.* (3) Readings, independent investigations, reports, and critical examination of money and banking policy, with emphasis on money and price levels, Federal Reserve policy and stabilization, control of the monetary market by the Federal Reserve System and the Treasury. Selected problems in monetary policy, monetary theory, and monetary reform.

BE 543. *Seminar in Current Economic Problems and Policies.* (3) Readings, independent investigations, reports, and critical study of current economic problems and policies considered in relation to their historical background and to the economic principles underlying them.

BE 600. *Thesis and/or Project Conference in Business Education.*

BE 601. *Business Education Seminar.* (3) Methods of educational research applied through a critical evaluation of selected problems and review of current literature in the field of business education. Includes a complete overview of the field.

BE 602. *Project Writing.* (3) Completion of the project required for the Master of Education degree.

Department of Psychology

M. I. CLAIBORNE, Ph.D., *Head*

The Department offers curricula leading to the Master of Science degree in Educational Guidance and Educational Psychology, and the Master of Arts and the Master of Science degrees in General Psychology.

CURRICULUM IN EDUCATIONAL GUIDANCE

The graduate program of study in Educational Guidance is designed for students who wish to prepare for personnel work or for guidance and counseling in elementary and secondary schools, and colleges.

Requirements for Admission to the Degree Program in Educational Guidance.—The graduate program in educational guidance is treated as a major in professional education. Thus, in addition to satisfying general requirements for admission to graduate study, students majoring in educational guidance should have satisfied teacher certification requirements; or they should have earned 36 quarter hours of undergraduate credit in education including one or more courses in general psychology, educational psychology, human development or child or adolescent psychology, and measurement and evaluation. Prospective majors in educational guidance are reminded that in most states guidance workers in public schools are required to satisfy teacher certification requirements. Guidance specialists engaged in work other than in public schools may not have need to satisfy teacher certification requirements. Thus, an undergraduate major (or its equivalent) in general psychology may be accepted as satisfying admission requirements provided the student has satisfied prerequisites for taking the "core courses in graduate education."

Graduate majors in Educational Guidance who majored in general psychology on the undergraduate level may elect the advanced test on the Graduate Record Examination in the field of psychology.

Course Program		
Education Core		Electives
Psychology 502	3	Psychology 462, or 531, or 571....3
Education 502	3	Psychology 523 or 573.....3
Education 526	3	Psychology 525 or 574.....3
Psychology 511	3	Psychology 529.....3
Psychology 543	3	Psychology 533.....3
		Psychology 534.....3
Total	15	Psychology 535.....3
Required Courses in Guidance		Psychology 536 or 572.....3
Psychology 512	3	Psychology 537.....3
Psychology 532	3	Psychology 538.....3
Psychology 539	3	
Total	9	Elect from above group..... 21

CURRICULUM IN EDUCATIONAL PSYCHOLOGY

M. I. CLAIBORNE, Ph.D., *Supervisor*

The graduate program of study in educational psychology is designed for students preparing for a career in public school work, especially students preparing to teach in the elementary grades, and others who desire psychological training in areas such as growth and development, psychological measurement, and diagnosis and remedial instruction, as a background for public school work.

Requirements for Admission to the Degree Program in Educational Psychology. The graduate program in educational psychology is treated as a major in professional education, thus, in addition to satisfying general requirements for admission to graduate study, students majoring in educational psychology should have satisfied teacher certification requirements, or should have earned 36 quarter hours of undergraduate credit in education including one or more courses in general psychology, educational psychology, human development or child or adolescent psychology and test and measurement.

Students who have not satisfied the above requirements, but who have been granted provisional admission to the department, must satisfy the requirements by taking the appropriate undergraduate course or courses before being granted regular status. Likewise, students who have earned the above undergraduate credit, but who exhibit basic deficiencies in the required undergraduate subjects may, at the discretion of the departmental staff, be required to remove the deficiencies by taking appropriate undergraduate courses before being granted regular status.

Graduate majors in educational psychology who majored in general psychology on the undergraduate level may elect the Advanced Test on the Graduate Record Examination in the field of psychology.

Education Core Courses
(15 credit hours)

Psychology 502
Education 502
Education 526
Psychology 511
Psychology 543

Basic Educational Psychology Curriculum (18 credit hours)

Psychology 523
Psychology 525
Psychology 531
Psychology 545
Psychology 551
Psychology 512 (thesis)

Electives:

The remaining twelve (or more) hours may be elected in one area of concentration, namely: psychological measurement, diagnosis and remedial techniques, or guidance. Teachers in elementary or secondary schools may elect a maximum of nine credit hours in a subject area, but not in education, as a part of the twelve hours for fulfilling this requirement.

CURRICULUM IN GENERAL PSYCHOLOGY

CALVIN O. ATCHISON, Ed.D., Supervisor

The graduate program of study in General Psychology is designed for the following students: (1) those preparing for a career in professional psychology, and thus plan further study toward the doctor's degree; (2) those preparing to work as psychometrists, school psychologists, junior or assistant psychologists in agencies or institutions, and other psychological work such as interviewing, counseling; (3) those preparing to teach psychology in junior colleges or teacher colleges; and (4) those who desire psychological training as a background for a career in psychiatry, medicine, social work, and other related professions.

Requirements for Admission to the Degree Program in General Psychology. In addition to general requirements for admission to graduate study, students desiring to major in general psychology should have completed an undergraduate major in psychology, or 36 quarter hours in undergraduate psychology appropriately distributed to give the student basic information and methodology in the field. In addition, and of equal importance, the undergraduate credits should include at least one year of laboratory science, mathematics, history, and sociology, and a course in philosophy, art, and music appreciation. (Note: Undergraduate foreign language credits are not specifically required for admission; however, students who plan further study in psychology toward the doctor's degree, or those who plan research in Psychology should recognize that a reading knowledge of French and/or German is a necessity.)

Students who have not satisfied the above requirements, but who have been granted provisional admission to the department, must satisfy the requirements by taking the appropriate undergraduate courses before being granted regular status. Likewise, students who have earned the required undergraduate credit, but who exhibit basic deficiencies in undergraduate subjects may, at the discretion of the departmental staff, be required to remove these deficiencies by taking appropriate undergraduate courses before being granted regular status.

Required Courses

Psychology 502
Psychology 505
Psychology 511
Psychology 512 (thesis)
Psychology 525
Psychology 541
Psychology 551
Psychology 571
Psychology 572
Psychology 573
Psychology 574
Psychology 575

Electives

Psychology 506-07
Psychology 523
Psychology 531
Psychology 543
Psychology 535
Psychology 481*

* Psychology 481, History and Schools of Psychology, is required of students who have not taken an equivalent course.

Specialization in School Psychology

A candidate for the master's degree in general psychology who wishes to qualify as a professional school psychologist may take the following courses in addition to the regular requirement of the curriculum.

Psychology 523
Psychology 531
Psychology 532
Psychology 535
Psychology 561
Psychology 563

Psychology 585-86

This latter program usually requires two years of study for the master's degree.

Undergraduate Courses Approved for Graduate Credit

Psychology 431 (3) Physiological Psychology
Psychology 432 (3) Physiological Psychology
Psychology 461 (3) Differential Psychology
Psychology 462 (3) Psychological Testing
Psychology 481 (3) History and Schools of Psychology

Graduate Courses

501. **Educational Statistics.** (3) Required of students majoring in graduate programs in which the course is specified as satisfying the requirements for a course in statistics in the core curriculum. Topics include measures of central tendency, measures of variability, tabular and graphic methods, the normal probability curve, and zero order correlation.

502. **Advanced Statistics for Research in Education and Psychology.** (3) Offers training and practice in the application of statistics to research. Topics studied are: harmonic and geometric mean, variance and covariance, curve fitting, sampling, reliability, and simple, multiple, and partial correlation. Core course, required of all graduate students majoring in education, pre-supposes a knowledge of elementary statistics.

505. **Advanced General Psychology.** (3) Basic course required for a major in general psychology. Deals with the history and present status of psychology including an examination of, and a critical discussion of the schools of psychology; and a consideration of major current psychological problems. Materials for the course will be taken from current professional literature as well as from basic texts in the field.

506-07. **Advanced Experimental Psychology.** (6) Experimental methods of investigation of psychological problems primarily in the areas of physiological and comparative psychology. One lecture and four laboratory periods.

511. **Research in Psychology.** (3) Deals with methods of research peculiar to psychology. Included are: type of problems of psychology, methods of collecting data, interpretation of data, and reporting of findings.

512. **Educational Psychology Thesis Seminar.** (3) Critical discussion of the research projects in progress and of the literature related to such projects. Credit awarded upon acceptance of the written report and passing the oral examination. Required of (and limited to) Psychology majors; and to be taken in conjunction with the doing of the research project.

523. **Advanced Mental Hygiene.** (3) Required of Educational Psychology majors. Course deals with a technical consideration of the principles of mental hygiene and personality development; with emphasis on the problems of mental hygiene encountered by parents, teachers, social workers and others who deal with children.

525. **Theories of and Measurement of Personality.** (3) Examines the theories of personality development and offers training in measuring and appraising personality.

529. **Group Dynamics.** (3) Deals with the nature of groups and with group approach to guidance; factors in group organization; the dynamics of group interactional processes; the effects of group sanctions; the qualifications and functions of the group leader; and, means of making group activities more effective.

Theoretical implications of group dynamics, as well as practical considerations and examples will both be stressed.

531. *Psychometrics*. (3) Deals with the theory and practice of psychological measurement. Training and practice offered in the use of individual and group measures of intelligence, achievement, aptitude and personality.

532. *Introduction to Guidance*. (3) The development and aspects of guidance in secondary schools and colleges; the place in guidance of occupational information, exploratory courses, tests, records, group and individual counseling, and placement; duties of guidance functionaries; types of guidance organizations.

533. *Techniques of Guidance*. (3) Critically examines the techniques used in guidance, and offers the student an opportunity to acquire skill in using the techniques.

534. *Student Personnel and Coordination of Personnel Services*. (3) Critically examines student personnel problems and services in both the public school and the college, and offers training in coordinating such services.

535. *Interviewing and Counseling*. (3) Offers training and practice in acquiring skill in interviewing and in counseling. Includes specific training in interviewing both pupils and parents and other adults, and in using the various methods of counseling.

536. *Individual Diagnosis*. (3) Designed to give training and practice in diagnosing the individual pupil to discover the etiology of his problem or difficulty, and to recommend or effect a solution. Attention is given to behavior, personality, and social problems, as well as to learning difficulties.

537. *Vocational Guidance and Placement*. (3) Designed to give training and practice in the application of guidance and counseling techniques to vocational problems, including placement.

538. *Occupational Information*. (3) Designed to give information leading to a knowledge of occupations and occupational trends, as well as competence in evaluating and handling occupational information.

539. *Practicum in Educational Guidance*. (3) Practice in educational guidance, using either high school students or college freshmen as subjects. Under supervision, the student will administer, score and interpret tests of various types. Using this information, along with that from other sources about the individual, the student will prepare recommendations for each counselee and give him the information in a counseling interview. Open only to students who have completed at least thirty hours in the Educational Guidance Curriculum and who are in their terminal quarter.

541. *Advanced Social Psychology*. (3) Lectures and discussions of social behavior; dynamics of group interaction is stressed.

543. *Advanced Educational Psychology*. (3) A critical examination of psychological concepts basic to learning in the school situation. Topics critically examined: growth and development, motivation, and theories of learning, with emphasis on application to the classroom situation. Attention is given to experimental investigation in educational psychology. (Core course, required of all students majoring in education.)

545. *Psychology of Learning*. (3) Consists of a critical examination of the theories of learning and a practical application of such theories to learning in the school situation. Required of Educational Psychology Majors.

551. *Emotional, Social, and Mental Growth of Children*. (3) A study of the emotional, social and mental growth of children from infancy to adolescence, with emphasis on the inter-relatedness of growth and the nurture necessary for growth. Observation in the college nursery school required as a part of the course. Required of Educational Psychology majors.

561. *Diagnosis and Remedial Techniques*. (3) Offers training in the selection, use, and interpretation of diagnostic tests and other techniques for discovering the causes of learning disabilities in the regular school subjects (except reading) and methods for correcting the learning difficulties.

563. *Diagnosis of Reading Disability and Remedial Reading*. (3) Offers training and practice in techniques the regular classroom teacher may use to discover the retarded reader, to analyze the nature and cause of the reading difficulty, and correct the difficulty. The students will be given an opportunity to work with a retarded reader.

571-72. *Clinical Testing*. (6) Offers training and practice in administering, scoring, and interpreting tests used for clinical purposes, with emphasis on the use of individual verbal, and non-verbal mental tests, and measures of personality. The student is required to acquire proficiency in administering, scoring, and interpreting the Stanford Binet Test and the WISC Test.

573-74. *Clinical Psychology*. (6) Applies clinical procedures to the diagnosis and treatment of behavior problems, with emphasis on the behavior problems of children. Prerequisite: An undergraduate major or minor in psychology.

575. *Projective Techniques*. (3) Designed to familiarize the student with the uses of projective techniques.

585-86. *Practicum for School Psychologist*. (3 or 6 Hrs.) Practice in the work of a school psychologist in a public school under the direction of a school psychologist. Open only to students who have completed the course of study for School Psychologists. Three hours credit for sixty hours practice, including the time spent in scoring and interpreting tests.

600. *Conference*. No credit. Required for the removal of the grade of "I" in Thesis Writing (512) and for the use of the facilities of the University when the student is not enrolled in a regular credit course.

Department of Science Education

W. N. JACKSON, Ph.D., Head and Graduate Curriculum Supervisor

CURRICULUM IN SCIENCE EDUCATION

The graduate program in science education is designed to provide experienced teachers, or those persons who have earned a bachelor's degree with a teaching major in a natural science, with further training basic to positions of increased responsibility and leadership, especially in the secondary school.

The program terminates with the awarding of the Master of Science degree in Science Education. In general, this program will include graduate work in a natural science or a combination of two areas in natural science, advanced courses in education and the teaching of science, a research project, and a thesis.

It is assumed that all majors in the program will have completed an undergraduate course of study with at least twenty-seven quarter hours in education, including practice teaching, and a major in a natural science or a combination of natural sciences with an average of 2.50 or better. A minimum of forty-eight quarter hours in natural science constitutes an undergraduate major.

If a minor is desired in science education the student must have completed an undergraduate course of study with a minimum of 36 quarter hours in one of the natural sciences and a minimum of twenty-seven quarter hours in education, including practice teaching. The student's cumulative average must be 2.50 or better for regular admission to the Department.

Fifteen credit hours must be taken in biology, chemistry, or physics, or a combination of any two; and 15 credit hours must be taken in education and science education, respectively.

A minor in science education requires a minimum of 18 graduate credit hours. Nine credit hours are required in biology, chemistry, or physics; and nine credit hours are required in science education.

Courses Required for a Major in Science Education

Science 500	.....No credit	Education 526	.....3
Science 501	.....3	Psychology 502	.....3
Science 502	.....3	Psychology 543	.....3
Science 512	.....3	Science Electives and Science	
Education 502	.....3	Education Electives	.....21
Education 511	.....3		

Courses Required for a Minor in Science Education

Science 500	No credit	Science Education Elective	3
Science 501	3	Science Electives	9
Science 502	3		

Undergraduate Courses Approved for Graduate Credit

Bacteriology 401—Applied Bacteriology.....	4
Biology 411—Advanced Genetics.....	4
Biology 441—Microtechnique.....	4
Zoology 441—Introduction to Parasitology.....	4
Zoology 483—General Entomology.....	4
Chemistry 440—Fundamentals of Chemistry.....	4
Chemistry 441—Elementary Analytical Chemistry.....	4
Chemistry 451-2-3—Modern Chemistry	9
Chemistry 462-3—Organic Qualitative Analysis.....	6
Mathematics 431-2-3—Mathematics for Jr. High School Teachers.....	9
Mathematics 434-5—Analytic Geometry and Calculus.....	6
Mathematics 436—Statistical Analysis.....	3
Mathematics 441-2-3—Introduction to Modern Mathematics.....	9
Physics 324—Heat and Thermodynamics.....	3
Physics 331-2-3—Electrical Measurements.....	9
Physics 412-3—Atomic and Molecular Structure.....	6
Physics 414—Radioactivity and Nuclear Physics.....	3
Physics 440—Fundamentals of Physics.....	4
Physics 441—Atomic, Molecular and Nuclear Physics.....	4
Science 425—Laboratory Practicum for Science Teachers.....	3
Science 427—Philosophy of Science.....	3
Science 441-2-3—Science for Jr. High School Teachers.....	9

Graduate Courses

500. *Seminar: Current Problems in Science Teaching.* (No credit.) Required of all graduate students in the department. Meets weekly during the summer quarter.

501. *Problems in the Teaching and Supervision of Science in Secondary Schools.* (3) The place of science in the secondary school. Objectives, curricula, recent trends, concept formation, and sequences investigated for clues as to desirable organization and supervision of a curriculum in science. Prerequisite: Teaching or supervising experience.

502. *Materials for Teaching Science.* (3) An advanced course treating the location, collection, and use of curriculum materials in science teaching. Prerequisite: Science Education 471. Three lecture periods.

505. *Problems in the Teaching of Elementary Science.* (3) This course is offered for majors in Elementary Education only. Acquaintance with educational research and other literature concerned with the teaching of elementary science. Consideration of problems related to the purpose, content, materials, activities, and evaluation in elementary science.

512. *Thesis in Science Education.* (3)

600. *Conference.* No credit. Required for the removal of the grade of "I" in Thesis Writing (512) and for the use of the facilities of the University when the student is not enrolled in a regular credit course.

GRADUATE AREA OF HEALTH AND PHYSICAL EDUCATION

ROBERT S. COBB, Ph.D., Coordinator

A major concentration leading to the Master of Education or the Master of Science degree is offered in the curriculum of Health and Physical Education.

Department of Health and Physical Education

JOHN D. HARVEY, Ed.D., Coordinator

LUA S. BARTLEY, Ph.D., Head

The Department provides faculties and a graduate faculty for a wide range of advanced and specialized training for teachers, leaders, administrators, coaches, recreation workers, and creative scholars. The chief administrator of graduate work in the Department is the Graduate Curriculum Supervisor in Health and Physical Education.

CURRICULUM IN HEALTH AND PHYSICAL EDUCATION

ROBERT S. COBB, Ph.D., Supervisor

This curriculum is designed to provide advanced training for educational specialists, workers in social institutions, and research scholars in the several areas of health and physical education.

The Master of Science Degree

Aside from a course program of 45 credit hours in the curriculum, competence in pure and applied research in health and physical education is regarded as one of the fundamental requirements for the attainment of this degree. The curriculum offers advanced training in all areas offered by the Department on the undergraduate level.

Requirements: The general requirements for admission to this degree program are the same as those required by the Graduate School. Applicants for graduate majors in the curriculum must have completed a minimum of 30 undergraduate quarter credit hours in the combined area of health and physical education. Those who plan a graduate minor in the field are expected to present at least 18 undergraduate credits in this area before they may become eligible to pursue graduate courses in health and physical education.

Students who plan to pursue a major in health and physical education must have successfully completed at least ten (10) courses and 30 credit hours from the following list (the first three courses listed are required):

1. Principles of Physical Education
2. Organization and Administration of Health and Physical Education
3. The Teaching of Physical Education or Methods and Materials in Physical Education, or Practice Teaching in Physical Education
4. Applied Anatomy and/or Kinesiology
5. Athletic Coaching (Football and Basketball)
6. Group Games
7. Community Recreation
8. Conditioning Exercises, Stunts or Tumbling
9. First Aid and Safety, or Safety Education, or Treatment of Athletic Injuries
10. History of Physical Education
11. Health Instruction, or Materials and Methods in Health Education, or The Teaching of Health
12. Individual Physical Education, or Restricted, or Corrective Physical Education
13. Intramurals or Program Planning
14. Nutrition
15. Personal Hygiene and/or Community Hygiene
16. Playground Supervision or Camp Craft and/or Camping
17. Philosophy of Physical Education and/or Psychology of Physical Education
18. Physical Diagnosis or Anthropometry
19. Physiology of Exercise
20. Courses in Physical Therapy
21. Adult Sports and/or Recreational Games
22. Rhythms

23. Modern Dance and/or Social Dance
24. Dance Composition and Theory
25. Individual Sports
26. Swimming
27. Measurement in Physical Education
28. Measurement in Health Education

To be admitted to the graduate curriculum, a student must also show proficiency in at least two of the following areas:

1. Team Sports
2. Individual Sports, or Self Testing Activities
3. Rhythms
4. Aquatics
5. Group Games

The Department reserves the right to determine proficiency by administering written and/or skill performance tests.

A student whose undergraduate record does not satisfy the above course requirements, or who has not pursued an undergraduate major or minor in health, physical education or recreation, but who has had six (6) or more courses in the combined areas; or who has done two or more years of successful teaching in physical education or the combined areas; or who has done two or more years of successful coaching, may be admitted to graduate preparation by special permission.

In such cases, as specified above, the student will be considered as a provisional student in the area and will be required to pursue specific undergraduate courses in addition to his graduate requirements.

The Curriculum: This curriculum requires 15 credit hours in the general education core, 27 credit hours in the major field courses, and 3 or more elective credit hours (depending upon the needs of the student) as follows:

<i>The Education Core</i> (15 quarter credits required)—	
Education 502—Public School Administration.....	3, or
Education 503—Public School Supervision.....	3
Psychology 501—Descriptive Statistics.....	3, or
Psychology 502—Advanced Statistics.....	3
Education 511—Methods of Research.....	3
Education 526—Philosophy of Education.....	3
Psychology 543—Advanced Educational Psychology.....	3

<i>Field of Specialization</i> (27 quarter credits required)—	
Health 501—Materials and Methods in Health Instruction.....	3
Health 502—School Health Problems.....	3
Health Education 503—Communicable Disease Control.....	3
Physical Education 504—Camping.....	3
Physical Education 511—Methods of Instruction and Supervision in Physical Education.....	3
Physical Education 512—Thesis Writing.....	3
Physical Education 513—Test and Measurements in Physical Education.....	3

Electives—3 or more credit hours may be selected from the following courses:

Education 514—Principals of Teaching.....	3
Education 524—History of Education.....	3
Education 573—Problems in Audio-Visual Education.....	3
Education 587—Curriculum Construction.....	3
Physical Education 403—Individually Adapted Physical Education.....	3
Physical Education 413—Program Planning.....	3
Physical Education 481—Organization and Administration of Intramural Activities.....	3
Physical Education 503—Camping.....	3
Physical Education 513—Tests and Measurements in P.E.....	3

Psychology 551—Emotional, Social and Mental Growth of Children.....	3
Special Education 467—Characteristics and Needs of the Mentally Retarded.....	3

Physical Education 512, Thesis Writing, is regarded as one of the most important requirements in the student's program; inasmuch as this intellectual activity is the most direct measurement of the student's ability to do original and independent investigative work, to do reflective thinking, to organize research materials, and to report both orally and in written form his findings in a formal document. The minimum standards for thesis writing are outlined elsewhere in the general requirements of the Graduate School.

The Master of Education Degree

The general admission requirements for the Master of Science and the Master of Education degrees are the same, and the curricular requirements are generally the same; except the latter degree requires more credit hours, and does not require basic research, a thesis, and a final oral examination. Instead, the student is required to complete a project based upon some phase of his duties in connection with his employment or prospective employment as a specialist in health and physical education.

Major-Minor Combination

Majors in graduate health and physical education are allowed to minor in related subject areas on the graduate level. The areas of general biology, zoology, social administration, education administration and supervision, psychology and physiology are suggested as appropriate areas for the selection of a minor field of concentration. A student may elect to pursue a minor field of concentration; however, he must complete a minimum of twenty-hour (24) hours in the major area requirements.

A graduate major in HPE with a minor area of concentration must complete the following courses:

1. Health 501.....	3 hrs.
2. Health 502.....	3 hrs.
3. Health 503.....	3 hrs.
4. Physical Education 503.....	3 hrs.
5. Physical Education 511.....	3 hrs.
6. Physical Education 512.....	3 hrs.
7. Physical Education 513.....	3 hrs.
8. Physical Education 521.....	3 hrs.
Total.....	24 hrs.

The 500 Level Courses Required for the Graduate Minor in HPE (18 hours)

Health 501	Materials and Methods in Health Education
Health 502	School Health Problems
Health 503	Communicable Disease Control
P.E. 511	Methods of Instruction and Supervision in Physical Education
P.E. 513	Tests and Measurements in Physical Education
P.E. 521	Current Administrative Problems in Physical Education

Undergraduate Courses Approved for Graduate Credit

HPE 401	Seminar in Health and Physical Education	(3)
HPE 402	Organization and Administration of Health and Physical Education	(3)
HPE 403	Individually Adapted Physical Education for Handicapped Children	(3)
PE 333	Principals and Philosophy of Physical Education	(3)
PE 412	Organization and Administration of Recreation	(3)
PE 413	Program Planning	(3)
PE 414	Organization and Administration of Camping	(3)
PE 434	Festivals and Demonstrations	(3)

Graduate Courses

Health 501. Materials and Methods in Health Education. (3) Concerned with the more progressive methods used in the teaching of health education on the elementary and secondary school levels. The use of and the evaluation of appropriate teaching aids and materials are emphasized. The course is especially designed to acquaint prospective teachers with those fundamentals necessary for discovering those health needs, interests and problems that students or pupils may have. Emphasis is placed on the methods and techniques necessary for integrated and correlated teaching of health in all areas of the school curriculum as well as the utilization of health activities in schools as teaching aids. (Required of all graduate majors and minors in the Department—No graduate prerequisites.)

Health 502. School Health Problems. (3) Organized to acquaint the prospective teacher, the in-service teacher, and the administrator with common health problems as may be found in schools. Special attention is given to the problems potentially inherent in a school's environment and in the utilization of and administration of school health services. There is discussion given to the protective and corrective services in the school health education program with emphasis given to the teacher's role in such a program. (Required of all graduate majors and minors in the Department—No graduate prerequisites.)

Health 503. Communicable Disease Control. (3) Covers the etiological and epidemiological factors in communicable diseases. All types of control measures are discussed; special emphasis is given to the area of immunology. The course is primarily designed for teachers, school administrators and public health workers. (Required of all graduate majors and minors in the Department. Prerequisite: Bacteriology 401.)

Health 512. Thesis Seminar. (3) Designed to assist students in the selection and adequate conduct of research problems in the area of school and public health education. Credit is given upon completion of the research problems and the submitting of the thesis. (Required of all graduate majors desirous of doing research in health education—Prerequisites are Education 511—*Elements of Research* and Health 502—*School Health Problems*.)

Physical Education 503. Camping. (3) Special emphasis is given to recreational activities for various age groups which would be compatible with the physical, mental and social characteristics of each group. The selecting, planning and equipping of camp sites are emphasized. Consideration is given to the planning and initiating of programs of activities for camps including nature study, first aid and safety factors, cooking and meal preparation, water sports and events, and general recreational activities. (Required of all graduate majors in the Department—No graduate prerequisites.)

Physical Education 511. Methods of Instruction and Supervision in Physical Education. (3) Practical methods and materials employed in the teaching of play activities, fundamental skills and athletic games are emphasized. Special attention is given to the in-service preparation of personnel. Program evaluation and improvement, facilities and equipment as well as criteria for determining their adequacy are stressed. Emphasis is placed on the working relationships of the physical educator and other personnel within the schools and in the communities. (Required of all graduate majors and minors in the Department—No graduate prerequisites.)

Physical Education 512. Thesis Seminar. (3) Designed to acquaint the student with literature available and research done in this area. Credit may only be given upon the completion and the acceptance of the thesis. (Required of all graduate majors in the Department—Prerequisites are Education 511 *Elements of Research* and Psychology 502 *Advanced Statistics*.)

Physical Education 513. Tests and Measurements in Physical Education. (3) Designed to acquaint the student with the role of testing and measurement in a total program of physical education. The coverage of the content includes anthropometric measurements, measurements of general health status, strength,

agility, and stamina indices, cardiac functioning tests, and those statistical methods used in determining motor ability and skill in physical education activities. (Required of all graduate majors and minors in the Department—Prerequisites include Psychology 311 *Elementary Statistics* and Psychology 502 *Advanced Statistics for Research in Education and Psychology*.)

Physical Education 521. Current Administrative Problems in Physical Education. (3) Designed to assist teachers in the area, supervisors and administrators in solving those problems peculiar to a program of physical education. The content includes a study of philosophies in the area, policies of governing a total program which would encompass classification of students, gradation in activities, progression in teaching, evaluation of student achievement, teaching loads, time schedules, selection of teachers, evaluation of in-service teaching and teachers, marking of students, financing a program and departmental budgeting. (Required of all graduate majors in the Department—Prerequisite: P.E. 511 *Methods of Instruction and Supervision in Physical Education*.)

Physical Education 523. Community Recreation. (3) The nature, significance and extent of recreation in a community are stressed. City, county, state, and national recreation programs and their organization are emphasized. Principles, techniques and skills needed in organizing and promoting leisure time activities for home, school and community are included in the experience. Those essential elements peculiar to all recreational programs such as leadership, areas and facilities, programs features and inclusiveness, recruiting of recreation workers and training programs for voluntary workers are covered in the content of the course. Opportunities are afforded students to experience actual recreation work and responsibility, as well as to organize and lead recreational activities. (Required of all graduate majors in the Department—Prerequisite: Physical Education 503—*Camping*.)

Physical Education 600. Conference. No Credit. This course is required for students who wish to use the facilities of the University when they are not enrolled in regular credit courses. It is intended primarily for thesis and project writing activities after the student has once been enrolled in Thesis Writing 512 or Project Writing 602.

Health and Physical Education 601. Seminar. (3) The current literature in health and physical education is reviewed in this course.

Health and Physical Education 602. Project Writing. (3) In this course, the student writes a terminal project under the supervision of the teacher of course 602.

GRADUATE AREA OF THE HUMANITIES

EARL L. SASSER, Ph.D., Coordinator

Major concentrations leading to the master's degree are offered respectively in English, Romance Languages, and Speech and Drama.

Department of English

C. B. LINDSAY, Ph.D., Head and Graduate Curriculum Supervisor

Graduate students in English may qualify for the degree of Master of Arts only. A candidate for this degree must pass a foreign language examination administered by the Department of Modern Foreign Languages. A graduate student in English must take a graduate minor in education, in Speech and Drama, or in a foreign language.

CURRICULUM IN ENGLISH

Undergraduate Courses Approved for Graduate Study

English 311	3	Literature of the Romantic Movement
English 331	3	Literature of the Sixteenth Century
English 332	3	Literature of the Seventeenth Century
English 333	3	Literature of the Eighteenth Century
English 393	3	Literature of Negro Life

- English 401 3 The Metaphysicals
 English 411 3 Shakespeare
 English 412 3 Shakespeare
 English 421 3 The English Novel
 English 422 3 The American Novel
 English 423 3 The Continental Novel
 English 431 3 Milton and Bunyan
 English 451 3 History of the English Language

Graduate Courses

511-512. *The English Seminar*. (6) English 511 is a course in methods and materials for the study of English language and literature. English 512 is the writing of the thesis itself.

521-522-523. *Studies in Nineteenth Century English Literature*. (9) A few of the British authors of the period covered will be studied. Each student will be required to complete one or more papers of a scholarly nature.

531-532-533. *Studies in the Development of the Novel in the United States*. (9) Research is required in some of the principal works of fiction of the United States.

541. *Studies in English Drama*. (3) Fall. The English Drama from its origin to 1642 is considered.

542. *Studies in English Drama*. (3) Winter. The English Drama from 1660 to 1800 is considered.

543. *Studies in English Drama*. (3) Spring. The English Drama from 1880 to the present is considered.

561-562-563. *Studies in Restoration and Eighteenth Century Literature*. (9) Research is conducted in British literature, 1600-1800. Topics will vary according to student interest.

581-582-583. *Studies in American Literature*. (9) Topics vary according to student interest.

600. *Conference*. No credit. Required for the removal of the grade of "I" in Thesis Writing (512) and for the use of facilities of the University when the student is not enrolled in a regular credit course.

Department of Modern Foreign Languages

ALMA T. WATKINS, Ph.D., *Head and Graduate Curriculum Supervisor*

The Department of Modern Foreign Languages offers the Master of Arts degree in Romance Languages.

Students may elect 27 hours in French and 18 hours in Spanish or they may elect 27 hours in Spanish and 18 hours in French.

Students in Secondary School Instruction may elect 15 hours in French or Spanish.

Undergraduate Courses Approved for Graduate Credit

- French or Spanish 411-12-13
 French or Spanish 421-22-23
 French or Spanish 441-42-43
 French or Spanish 451-52-53
 French 411-12: The Classical Age of French Literature (6)
 French 413: Main Ideas of the Eighteenth Century (3)
 French 421: Phonetics (3)
 French 422-23: Advanced Grammar, Oral and Written Composition (6)
 French 441-42-43: French Civilization (9)
 French 451-52-53: Modern French Literature (9)
 Spanish 411-12-13: Spanish Prose and Poetry of the Golden Age (9)
 Spanish 421: Phonetics (3)
 Spanish 422-23: Advanced Grammar, Oral and Written Composition (6)
 Spanish 441-42-43: Spanish and Spanish American Civilization (9)
 Spanish 451-52-53: Modern Spanish Literature (9)

Graduate Courses in French

501. *Old French*. (3) An introductory course to medieval French. The course includes reading, phonology and morphology of old texts in prose and poetry.

511-12. *Research in Thesis Writing and the Thesis*. (6) Required of all candidates for the Master's degree in French.

521-22-23. *French Literature of the Sixteenth Century*. (9) An intensive study of French Literature of the French Renaissance with emphasis on the Pleiade, Rabelais, and Montaigne.

541-42-43. *The French Novel*. (9) Consists of the origins and development of the French Novel.

551-52-53. *The French Drama*. (9) Consists of the development of the French Drama from Corneille to the present. Offered in alternate years with French 541-42-43.

600. *Conference*. No credit. Required for the removal of the grade of "I" in Thesis Writing (512) and Education 602 (Project Seminar), and for the use of the facilities of the University when the student is not enrolled in a regular course.

Graduate Courses in Spanish

501. *Old Spanish*. (3) A study of Old Spanish language and literature. The course includes reading, phonology and morphology of old texts in prose and poetry.

511-12. *Research in Thesis Writing and the Thesis*. (6) Required of all candidates for the Master's degree in Spanish.

521-22-23. *Origins and Development of the Spanish Novel*. (9) First Quarter: The Celestina-authorship, sources and influences. Second Quarter: The Quixote. Third Quarter: The Picaresque Novel.

531-32-33. *The Modern Spanish Novel*. (9) An intensive study of modern novel beginning with Fernan Caballero.

551-52-53. *The Spanish Drama from its Origin to the Present*. (9) Research in the drama from the Medieval period to the present. Offered in alternate years with Spanish 531-32-33.

600. *Conference*. No credit. Required for the removal of the grade of "I" in Thesis Writing (512) and Education 602 (Project Seminar) and for the use of the facilities of the University when the student is not enrolled in a regular credit course.

Department of Speech and Drama

T. E. POAG, Ph.D., *Head and Graduate Curriculum Supervisor*

Graduate work in speech and drama is designed to qualify students for the teaching of speech and drama in secondary schools, colleges, and universities, or to qualify them for positions in the professional and non-professional theatre as actors, playwrights, directors and technical directors; and in the speech area as speech correctionists. Candidates for the degree of Master of Arts or Master of Science must have had preliminary training in the areas selected for graduate work equivalent to that required in like subjects in this University (48 hours) for the Bachelor of Arts or the Bachelor of Science degree in the speech and drama areas or in closely related fields. Eighteen hours in speech and drama are required for a graduate minor. The student must have completed 18 hours or more on the undergraduate level for admission to this program. The graduate courses for the minor include: Speech 501, 503, 541, 551, 561, 581, or related courses.

The Master of Arts or Master of Science degree is offered in speech and drama. The speech and drama program includes six hours in dramatic literature; 21 hours in drama and theatre; and 18 hours in speech.

The program in speech includes 30 hours in speech and 15 hours in drama or related courses. The program in drama includes 30 hours in drama and 15 hours in speech or related courses.

Students working toward the Master of Arts degree are required to pass an examination in a modern foreign language; and pass a qualifying examination at the end of thirty hours.

Students working toward the Master of Science degree in Speech and Drama are not required to take a modern foreign language, but must pass a qualifying examination at the end of thirty hours.

The University provides opportunities for public presentation of the work of graduate students in dramatic interpretation, acting, directing, technical production, and playwriting. Facilities are also provided for public address, and speech and audiology.

Undergraduate Courses Approved for Graduate Credit

- 301. General Dramatics (3)
- 311-12-13. Theatre History (9)
- 323. Psychology of Speech (3)
- 361. Parliamentary Procedure (3)
- 381. Voice Science (3)
- 382. Anatomy and Physiology of the Vocal Mechanism (3)
- 383. Hearing Disorders (3)
- 421. Stage Design (3)
- 422. Stagecraft (3)
- 431. Costume Design (3)
- 452. Advanced Public Speaking (3)
- 461. Public Address I (3)
- 462. Public Address II (3)
- 463. Advanced Public Discussion (3)
- 481. Audiometry and Hearing Aids (3)
- 482. Language Disorders and Cerebral Palsy (3)
- 483. Clinical Methods and Practice in Speech Pathology (3)

Graduate Courses in Speech

- 501. *Phonetics and Speech Training*. (3) Study of the physiological requirements for the production of American speech sounds. Application to the special needs of speech and hearing therapists, teachers, actors and other students of English pronunciation. Extensive reading, broad and narrow transcription. Prerequisite: Speech 212.
- 502. *Regional and Historical Phonetics*. (3) Study of American speech sounds in context of the historical development of English pronunciation. Also consideration of dialectal areas of America, variations in vowel color and consonant production. Special application for pedagogy and research investigations. Prerequisite: Speech 212 or 501.
- 503. *Voice Science*. (3) Consideration of aspects of the phonetic, anatomic, physiologic, and physical bases of speech. (Laboratory practice) Prerequisite: Speech 201.
- 504. *Speech Pathology*. (3) An extensive study of organic speech disorders. Prerequisite: Speech 201 or 213.
- 505. *Lip Reading*. (3) Positions and movements involved in English speech and the current methods used in teaching Lip Reading.
- 506. *Psychology of Speech*. (3) Basic factors in persuasion, technique of persuasion, attention, suggestion, motivation, the audience, semantic and interview. Prerequisite: Psychology 242.
- 507. *Anatomy and Physiology of the Vocal Mechanism*. (3) Respiration, articulation, resonance, and phonation. Practical application to speech improvement. Prerequisite: Speech 381 or 503.
- 508. *Hearing Disorders*. (3) Physiology and anatomy of auditory mechanism, symptomatology and pathology of hearing disorders, their surgical treatment, clinical and classroom management. Prerequisite: Speech 381 or 507.
- 509. *Experimental Phonetics*. (3) Study of parameters of acoustic spectra by spectrum analysis. History of experimental phonetics. Students learn to

use wave analyzing equipment and to interpret acoustic information in connection with individual problems. Prerequisite: Speech 212 or 501 and consent of instructor.

511-512. *Speech and Drama Seminar*. (6) Methods of research and thesis writing in speech and drama.

521. *Public Address I*. (3) A study of speech making from ancient time through the Renaissance and includes attention to the development of rhetorical theory. Prerequisite: Speech 201 or 202.

522. *Public Address II*. (3) A study of speech making from the Renaissance to the modern times and includes attention to the development of rhetorical theory. Prerequisite: Speech 201 or 202.

531. *Speech Correction*. (3) Especially designed to meet the needs of the teacher of speech in public schools and colleges. This course will deal with actual clinical processes in the theory and practice of speech correction and training of visual hearing. Prerequisite: Speech 201 or 213.

533. *Audiometry and Hearing Aids*. (3) Theory and practice in hearing disorders, causes, and remedial training; types of cerebral palsy, causes and treatment of cerebral palsy speech. Prerequisite: Speech 213 or 531.

591. *Advanced Public Discussion*. (3) Critical evaluation of the major principles and techniques of persuasion employed in public address and informal discussion.

Subsequent additional requirements for the Master of Science degree are (1) admission to candidacy (for requirements see section on "Admission")

600. *Conference*. No credit. Required for the removal of the grade of "T" in Thesis Writing (512) and Education 602 (Project Seminar), and for the use of the facilities of the University when the student is not enrolled in a regular credit course.

Graduate Courses in Drama

Drama

- 541. *Dramatic Structure I*. (3) A study of dramatic history and theory, with reading of representative tragedies.
- 542. *Dramatic Structure II*. (3) A study of dramatic history and theory, with reading of representative comedies.
- 551. *Technical Productions Stagecraft*. (3) The theory and practice of stage production; planning of small theatres, stage arrangement, problems and practice in scene construction; design, and elements of stage lighting. Prerequisite: Speech 301 or 422.
- 552. *History of the Theatre*. (3) A study of the development of the theatre from the Greeks to the present; its place in the history of civilization and its changing relations to social conditions. Prerequisite: Speech 311 or 341.
- 553. *American Drama and Theatre*. (3) A study of the American theatre and of the principle American plays, with special emphasis on the drama as an expression of national life and culture. Prerequisite: Speech 341 or 552.
- 561. *Advanced Play Directing*. (3) Theory and practice in the training of actors and in directing, the making of a prompt book and designing of a full length play. Prerequisite: Speech 301 or 302.
- 562. *Directing and producing the full length play for experimental and public production*. (3) Prerequisite: Speech 302 or 561.
- 571. *Playwriting I*. (3) The principles of dramatic construction and practice in the writing of the full length play. Prerequisite: Speech 303.
- 572. *Playwriting II*. (3) Practice in writing the one-act and full length plays for the stage with experimental and public productions. Prerequisite: Speech 303.
- 581. *The English Drama I*. (3) The English Drama from its origin to 1800. Prerequisite, English 213 or Speech 341.
- 582. *The English Drama II*. (3) The English Drama from 1660 to 1800. Prerequisite, English 213 or Speech 581.

583. *The English Drama III.* (3) The English Drama from 1800 to the present. Prerequisite: English 213 or Speech 582.

600. *Conference.* No credit. Required for the removal of the grade of "I" in Thesis Writing (512) and Education 602 (Project Seminar), and for the use of the facilities of the University when the student is not enrolled in a regular credit course.

The following courses are required for the graduate speech and drama major: Speech Courses: 501, 502, 521, 591 or related courses; Drama and Theatre courses: 541, 542, 551, 561, 562 or related courses; Thesis: 511, 512; Dramatic Literature: 581, 582; Concentration in Speech and Audiology: 501, 502, 503, 504, 505, 507, 508, 509, 511, 512. The other 15 hours are in Psychology and Special Education or Speech and Drama courses.

GRADUATE AREA IN THE NATURAL SCIENCES

GEORGE HULL, JR., Ph.D., Coordinator

Programs of study leading to the master's degree are offered respectively in Chemistry and Zoology. Each curriculum requires a minimum of 45 graduate credit hours in the major field.

Department of Biology

H. K. Wood, Ph.D., Head and Graduate Curriculum Supervisor

The Department of Biology offers graduate programs in zoology leading toward the Master of Science and Master of Arts degrees. Both programs are designed (1) to prepare scholars for the pursuit of research in both the pure and applied branches of zoology, (2) to improve the subject field training of high school and college biology teachers as well as workers in technical branches of biology, and (3) to provide service courses for graduate areas of other departments of the University whose students have the necessary prerequisites. Regular status in the Department of Biology indicates the student has (1) had the courses in biology or their equivalents as required for an undergraduate major in the Preprofessional and Non-Teacher Training Curriculum (see Biology Department, undergraduate curriculum, in University Catalog) with a minimum of 36 acceptable quarter hours with at least a 2.50 point average (based on the 4.00 system), (2) passed each area of the written Departmental Qualifying Examination, and met all other requirements as specified by the Graduate School.

Subsequent departmental requirements for the Master of Science degree in addition to those required by the Graduate School are (1) regular participation in Seminar, (2) the passing of an oral or written departmental final comprehensive examination over the major field administered by the Guidance Committee prior to application for the Graduate School final oral examination and (3) presentation of a seminar on thesis.

A candidate pursuing a program leading to a Master of Arts degree, must in addition to fulfilling all requirements for the Master of Science degree, pass a foreign language examination based on a reading knowledge of either German or French*. This should be done prior to the end of the second quarter of the graduate program.

In fulfilling the minimum forty-five quarter hours of approved courses for either the Master of Science or the Master of Arts degree, the basic core consists of thirty-six (36) quarter hours of prescribed courses. The remaining nine (9) hours are based on work in the chosen area of research. These research courses are Zoology 510—*Literature and Methods in Research*, Zoology 511—*Research in Zoology* and Zoology 512—*Thesis Writing*. An "I" is awarded only in Zoology 512 at the end of the quarter if the thesis is not completed. Thereafter, the candidate is to enroll in Zoology 600—*Thesis Conference* for each additional quarter he is working on the thesis, and until it is completed. An "I" removal grade is then awarded for Zoology 512.

Emphasis is placed on research, in connection with which all the requirements necessary for a scholarly piece of work will be demanded. Available areas for research are in the fields of Embryology, Entomology, Genetics, Parasitology and Physiology. Owing to the research requirements of the Department, a student ordinarily is required to spend a minimum of six (6) quarters of work to qualify for a master's degree.

The Department offers a graduate minor in zoology for the subject field of those graduate students seeking a Master of Science degree in either science education or secondary school instruction or a Master of Education degree in secondary school instruction who have the equivalent of an undergraduate major in the field of biology (for purpose and prerequisites, see the section on "Special Requirements for Majors in Secondary Education"). The minor consists of eighteen (18) quarter hours selected from graduate courses in the basic core and may include nine hours of undergraduate courses approved for graduate credit as listed in the graduate section.

Limited numbers of graduate and research assistantships are available to students who show unusual promise and competence in the field. Applications should be made by April 1st of the preceding school year for the summer and/or succeeding year for which the assistantships are to be awarded.

CURRICULUM IN ZOOLOGY

Required Courses

Course	Title	Basic Core	Quarter Hours Credit
Zoology 521-2	General Experimental Phys. I-II	.....	8
Zoology 531	Experimental Embryology	.....	4
Zoology 534	General Cytology	.....	4
Zoology 542	Advanced Parasitology	.....	4
Zoology 543	Arthropods and Diseases	.....	4
Zoology 571	Physiology and Genetics of Microorganisms	.....	4
Zoology 581	Morphology and Taxonomy of Insects—I	.....	4
Zoology 582	Taxonomy of Insects—II	.....	4
Total			36 Hours
For Research			
Zoology 510	Literature and Methods in Research	..	3
Zoology 511	Research in Zoology	.....	3
Zoology 512	Thesis Writing	.....	3
Total			9 Hours
Grand Total			45 Hours

Undergraduate Courses Approved for Graduate Credit

Biology	411	Advanced Genetics	(4)
Biology	441	Microtechnique	(4)
Bacteriology	401	Applied Bacteriology	(4)
Zoology	401	Invertebrate Zoology	(4)
Zoology	402-3	Mammalian Physiology	(8)
Zoology	441	General Parasitology	(4)
Zoology	483	General Entomology	(4)

Graduate Courses in Zoology

500. *Zoology Seminar.* (No Credit) Current problems in Biology. Required of all seniors and graduate students in the Department. Meets weekly during each quarter of the regular school year, and summer terms.

* Spanish may be elected upon the recommendation of the major adviser and the approval of the Head of the Department and the Dean of the Graduate School.

510. *Literature and Methods in Research*. (3) The purpose of this course is to acquaint the student with the literature in the area of his selected research. Emphasis is placed on methods used in research. Both oral and written reports are required. This course should precede Zoology 511.

511. *Research in Zoology*. (3) This course provides for individual research under the supervision of the major adviser. The student must present a general statement of proposed research and obtain the approval of his Guidance Committee. Prerequisite: Zoology 510.

512. *Thesis Writing*. (3) This course enables the student to receive credit for the preparation of a thesis over his research under the supervision of his Guidance Committee. The format of the thesis is expected to conform with that adopted by the Department of Biology.

521. *General Experimental Physiology I*. (4) The chemical and physical nature of protoplasm. Considered are its chemical constituents and their properties, its colloidal nature and the bearing of this state on its physical properties and processes. Prerequisite: Consent of instructor. Three lectures and two laboratory periods.

522. *General Experimental Physiology II*. (4) The metabolic activities of protoplasm. Both catabolic and anabolic aspects are considered. Prerequisite: Consent of instructor. Three lectures and two laboratory periods.

531. *Experimental Embryology*. (4) The principles and mechanisms of developmental physiology. Prerequisite: Zoology 432 or equivalent or consent of instructor. Three lectures and two laboratory periods.

534. *General Cytology*. (4) The structure and behavior of the cell and its components with special emphasis on mitosis and meiosis. Prerequisite: Consent of instructor. Three lectures and two laboratory periods.

542. *Advanced Parasitology*. (4) Life histories, taxonomy, morphology and general importance of the parasitic protozoa and the helminths to man and animals. Prerequisite: Consent of instructor. Three lectures and two laboratory periods.

543. *Arthropods and Diseases*. (4) A study of the relationships of arthropods to diseases of man and animals. Special considerations are given to the mites, ticks, lice, bugs, fleas, mosquitos, and flies. Prerequisite: Consent of instructor. Three lectures and two laboratory periods.

571. *Physiology and Genetics of Microorganisms*. (4) The heredity of viruses, bacteria, molds, yeast, and protozoa, with emphasis on protozoan genetics. Physiologic aspects primarily relating to genetics in these forms are also considered. Prerequisite: Biology 311 and consent of instructor. In addition, Biology 411 is recommended. Three lectures and two laboratory periods.

581. *Morphology and Taxonomy of Insects I*. (4) A study of the comparative morphology of insects with special emphasis on the taxonomic applications of morphology; including a survey of the various insect groups, with emphasis on the characters used in determining adult insects to family and beyond. Some attention is given to methods of collecting, mounting and preparing insect material for study. All the orders are covered except Coleoptera, Lepidoptera, Diptera, and Hymenoptera. Prerequisites: Zoology 483 or consent of the instructor. Three lectures and two laboratory periods per week.

582. *Taxonomy of Insects*. (4) A continuation of Zoology 581, covering Coleoptera, Lepidoptera, Diptera, Hymenoptera. Prerequisites: Zoology 483 or consent of the instructor. Three lectures and two laboratory periods per week.

Zoology Seminar. No credit. Required of all graduate students in Zoology.

600. *Conference*. No credit. Required for the removal of the grade of "I" in Thesis Writing (512) and Education 602 (Project Seminar), and for the use of the facilities of the University when the student is not enrolled in a regular credit course.

Department of Chemistry

SAMUEL VON WINBUSH, Ph.D., Chairman of Chemistry Committee and Supervisor of Graduate Studies in Chemistry

The Department of Chemistry offers a graduate program of instruction and research leading to the Master of Science degree which conforms to the requirements of the Graduate School of the University.

CURRICULUM IN CHEMISTRY

Undergraduate Courses Approved for Graduate Credit

Chemistry 440. *Fundamentals of Chemistry*. (4) (for Science education majors)

Chemistry 441. *Elementary Analytical Chemistry*. (4) (for science education majors).

Chemistry 451-2-3. *Modern Chemistry* (12) (for science education majors).

Chemistry 462-3. *Organic Qualitative Analysis* (6).

Chemistry 481-2-3. *Physical Chemistry* (12) (restricted to students not majoring in chemistry).

Graduate Courses

492. *Chemistry Seminar*. No credit. Required of all Seniors and candidates for the advanced degree. Seminar meets once a month.

501-2. *Fundamental Chemistry*. (4) Prerequisite: 481-2-3. Introduction to quantum chemistry, structural inorganic chemistry, and discussions of advanced experimental techniques in the determination of structure.

504. *Glassblowing*. (3) Theory and practice in glass blowing.

513-4. *Atomic and Molecular Structure*. (6) See Physics Department, (or Physics 412-3). Prerequisite: 483.

521-2. *Advanced Analytical Chemistry*. (4) Methods of Separation, including ion exchange, and absorption chromatography. Analytical aspects of absorption spectrophotometry (visible and infrared), and x-ray absorption, fluorescence, and diffraction.

540. *Non-Aqueous Solvents*. (3) Reactions and acid-base relationships in non-aqueous solvents.

541-2-3. *Advanced Inorganic Chemistry*. (9) Theoretical approach to the systematization of inorganic chemistry.

544-5. *Inorganic Syntheses*. (6) Advanced experimentation leading to the preparation of selected inorganic compounds. Vacuum manipulations of volatile compounds are also included.

561-2-3. *Advanced Organic Chemistry*. (9) A survey of the more important classes of organic compounds and their reactions; a discussion of selected topics, including tautomerism, electronic interpretation of organic reactions, mechanisms, molecular rearrangements, and stereo-chemistry.

566-7. *Organic Syntheses*. (6) Laboratory practice in the synthesis of organic compounds of complex structure.

571-2. *Quantitative Organic Micro Analysis*. (8) A discussion of and laboratory in micro techniques involved in use of micro balance, carbon and hydrogen combustion analysis, molecular weight determinations, methoxy group analysis, Dumas and Kjeldahl nitrogen determination, and sulfur and halogen analyses.

581-2-3. *Chemical Thermodynamics*. (9) Prerequisites: 481-2-3. Advanced discussion of the principles of classical thermodynamics, electro-chemistry of dilute and strong solutions, surface chemistry and kinetics.

590. *Chemical Research*. (6 max) Prerequisite: Permission of staff member concerned.

591. *Special Topics*. (2) Prerequisites: Permission of Instructor. A series of courses in special areas of inorganic, analytical, organic, and physical chemistry.

600. *Conference*. (No Credit) Required for the removal of the grade of "I" in Thesis Writing (512) and for use of the facilities of the University when the student is not enrolled in a regular credit course.

GRADUATE AREA OF THE SOCIAL SCIENCES

SHERMAN WEBSTER, Ed.D., Coordinator and Head of Social Sciences

Department of Social Sciences

The Department offers a major concentration leading to the Master of Arts or Master of Science Degree in History.

CURRICULUM IN HISTORY

ALONZO T. STEPHENS, Ph.D., Graduate Curriculum Supervisor

A student may elect either to major in the American or Modern European area of History. In his chosen area he will do the greater portion of his course work and select and develop a research problem for his thesis. All majors are required to complete courses 511, 512, and 533 or 534, depending upon the area of history in which they desire to specialize. A major constitutes thirty to forty-five quarter hours of history; Students may select fifteen graduate hours in another field of graduate study with approval of the Major Adviser.

A minor consists of fifteen quarter hours of regular series (not to be included are: History 511, 512, 533 or 534), selected from the offerings at the 500 course level.

Students with a bachelor's degree in the fields other than history, including a minor in history, shall take nine (9) undergraduate hours in history at the 300 or 400 level in the area he seeks specialization at the Graduate (500 courses) level. At the discretion of the Supervisor and members of the Department, an examination may be administered to determine the student's ability and potential. If the student's undergraduate average is below 2.50 quality points he shall be assigned 15 undergraduate hours and given a comprehensive history examination designed to recall facts, interpret data and develop topics at an accepted level in writing.

Students planning graduate work in history should have a social science major with a minimum of 21 undergraduate credits in history. Written and oral comprehensive examinations are required after a student has earned 21 quarter hours of history or before he is allowed to continue his study.

Students are required to take History 511, 533 or 534 before they are allowed to register for History 512.

Undergraduate Courses Approved for Graduate Credit

A student who has an earned bachelor's degree in history may select nine (9) hours from the course offerings in history that are approved for graduate credit. These courses must be approved by the Supervisor of History. Courses approved for graduate credit are:

- 331. American Colonial History (3)
- 371-72. Economic History of United States (6)
- 381-82. Civil War and Reconstruction (6)
- 385-6-7. Vital Topics (9)
- 391-92-93. Russian History (9)
- 401-2-3. Contemporary World History (9)
- 421-22-23. Diplomatic History of United States (9)
- 433-34. The British Empire (6)
- 442-43. Renaissance and Reformation (6)
- 451-52-53. Latin American History (9)
- 481-82-83. World Civilization (9)
- 491-92. The Negro in American History (6)

Students with an undergraduate major in history or related art and science disciplines with averages acceptable to the Graduate School and who seek a minor in history must complete fifteen quarter hours of the 500 course level. If there is a need based on low undergraduate preparation he will have to take six (6) to nine (9) hours of courses listed above before he completes his requirements at the 500 course level.

A student will not be assigned a course at 500 course level until he has completed the undergraduate prerequisite. Not to be included in this requirement are History 511, 512, 533 or 534.

Graduate Courses

501-2-3. *Seminar in American History*. (9) An intensive study of selected problems in the history of the United States from 1606 to 1900.

511. *Historical Method*. (3) The principles and techniques of research as applied to the study of history; illustrative problems in the preparation of a monograph. Required of all candidates for the advanced degree.

512. *Master's Thesis*. (3) Credit for the approved Master's Thesis.

521-2-3. *Regional American History*. (9) The study of problems of regions or sections of the United States with special emphasis on the South and West.

531-2. *Recent United States History*. (6) The study of contemporary problems in the United States with special emphasis on the social, economic, and political phases of American life.

533. *American Historiography*. (3) A course designed to introduce students to historical literature through an analysis of American historians and their writings. Required of all candidates for the advanced degree who have selected the area of American History for specialization.

534. *European Historiography*. (3) A course in the European field similar to History 533. Required of all candidates for the advanced degree who have selected the area of European History for specialization.

541-2-3. *Seminar in European History*. (9) The study of Europe in the nineteenth century, with emphasis on the cultural developments of Western Europe. Prerequisites: History 301-2-3.

551-2-3. *Problems in American Constitutional History*. (9) An intensive study of selected problems relating to the origin and evolution of the principles, institutions, practices, and laws which are embodied in the American Constitutional system. Prerequisites: History 361-2-3.

571-2-3. *Seminar in World Civilization and Culture*. (9) The intensive study of selected social, economic, political and international problems of the nations of the Near East, Far East, Africa and Latin America. Prerequisites: Twenty-seven hours in History, of which nine must be in American History.

600. *Conference*. No credit. Required for the removal of the grade of "I" in Thesis Writing (512) and Education 602 (Project Seminar), and for the use of the facilities of the University when the student is not enrolled in a regular credit course.

GRADUATE AREA IN VOCATIONAL EDUCATION

HENRY L. TAYLOR, Ph.D., Coordinator, Head and Supervisor

A major in Agricultural Education leading to the Master of Science degree is offered in this area. A minimum of 45 graduate credit hours is required.

Department of Agricultural Education

The required 45 credit hours are distributed as follows:

Agricultural Education	15 hours
Education Core	15 hours
Animal or Plant Science	15 hours

The education core consists of the following courses:

Education 502 (3)	School Administration.
Education 511 (3)	Methods of Research.
Education 526 (3)	Philosophy of Education.
Psychology 502 (3)	Advanced Statistics.
Psychology 543 (3)	Advanced Educational Psychology.

These courses are described in the graduate education section of this Bulletin.

Undergraduate Courses Approved for Graduate Credit

Agricultural Economics 312 Marketing Methods and Problems (3)
Agricultural Economics 322 Farmers' Cooperative (3)
Agricultural Economics 401 Tabular and Graphic Presentation of Data (3)
Agricultural Economics 451-52, (6) Special Problems in Agricultural Economics Research.

Graduate Courses

501. *Federal Relations to Education and Agriculture.* (3) A study of the history of vocational education in the United States. The philosophy of vocational education in agriculture, legislation, financing, planning and coordinating agricultural education with general education included.

502. *Educational Problems in Programs of Teachers of Vocational Agriculture.* (3) A critical study of the high school curricula offerings in agriculture. Experience given in enterprise analysis, course of study building, general program planning and summarizing. Problems in organization, administration and teaching the agricultural departments of secondary schools considered.

512. *Thesis Writing.* (3) Involves the actual writing of the thesis. Consideration given to form, statement of problems, collection of data, their use, and conclusions to be reached.

521. *Organization and Administration of Teacher Training in Vocational Agriculture.* (3) A study of the organization, philosophy, objectives and requirements for teacher training in vocational education in agriculture.

523. *Evaluation and Program Planning in Agricultural Education.* (3) Programs of vocational education in agriculture in local situations as a basis for elective program planning evaluated.

600. *Conference.* No credit.

Department of Industrial Education

LEON C. FARBER, M.S., *Acting Head*

Graduate students majoring in Secondary School Instruction who have completed undergraduate majors or minors in industrial education may select two of the following courses for graduate credit:

Industrial Education 401. *Industrial Arts Design.* (3)

Industrial Education 412-13. *Job Analysis.* (3)

Industrial Education 431. *Curriculum Building in Trade and Industrial Subjects* (3)

Industrial Education 435-36. *Problems in Trade and Industrial Teaching.* (3)

SCHOOL OF AGRICULTURE
AND HOME ECONOMICS

MAJOR F. SPAULDING, Dean

Faculty:

Department of Agricultural Education

Walter A. Flowers, David A. Hamilton, and Henry L. Taylor.

Department of Animal Science

Ozzie L. Adams, Arthur B. Davis, Walter S. Davis, Roland Norman, W. E. Officer, Frederick D. Smith, Early J. Thornton, R. G. Seals, Theodore H. Wood, H. R. Wheaton, E. Williams, and L. Davis.

Department of Plant Science

Hazo W. Carter, H. C. Hardy, Neal McAlpin, Major F. Spaulding, and Fred E. Westbrooks.

Department of Home Economics

Augustine S. Dartis, Mattye C. Flowers, Geraldine B. Fort, Luther Franklin, Mary H. Greer, Ruth A. McDowell, Cathryn B. McKinney, Miriam L. McTeer, Lillie B. Redmond, Marylouise Ritter, Miriam G. Towns, and Eddy P. Rideout.

SCHOOL OF AGRICULTURE AND HOME ECONOMICS

M. F. SPAULDING, Ph.D., *Dean*

The School accepts the aims of the University in striving to meet the needs, ideals and aspirations of its students. It accepts the responsibility of directing them in the various areas of the School and the University for instruction in the hope that a greater knowledge and understanding of human and natural resources will be obtained so that the individual, the State and the nation will be benefitted.

The School recognizes that the home and family life is fundamental and primary to the individual and to the survival of our economic structure. Therefore, the School's philosophy recognizes and accepts the responsibility for preparing people for homemaking and the maintenance of better homes; for producing and processing more and better agricultural products; for intelligent and respectful participation in the democratic life of the community and the State.

Instruction is offered in the several general and specialized fields of agriculture and home economics. The curricula provide training for students who desire:

- (1) to teach vocational agriculture and home economics;
- (2) to engage in agriculture and home economics extension;
- (3) to pursue specialized careers in agriculture and home economics.

The bachelor of science degree is offered in Agricultural Education, Animal Science, Biochemistry, Foods and Nutrition, Home Economics Education, Child Development, Clothing and Textiles, Agronomy and Horticulture. A minimum of 198 quarter hours with a minimum average grade of "C" (2.00) is required for graduation, with not less than 66 quarter hours in 300 and 400 level courses.

The master of science degree is offered in Agricultural Education, Animal Science and Plant Science.

Scholarship Award

The J. E. Walker Senior Scholarship Award is presented annually by the Universal Life Insurance Company of Memphis, Tennessee to Agricultural and Home Economics majors in the technical and supporting sciences, as an inducement for High Scholarship.

CURRICULUM IN AGRICULTURE

<i>Freshman</i>				<i>Sophomore</i>			
<i>Course & Number</i>	<i>F</i>	<i>W</i>	<i>S</i>	<i>Course & Number</i>	<i>F</i>	<i>W</i>	<i>S</i>
Agriculture 111, 112, 113	1	1	1	Agricultural Economics 201	3		
Air Science 151, 152, 153	1	1	1	**Agronomy 201, 202	3	3	
Animal Husbandry 101, 102, 103	3	3	3	Art 133		3	
Chemistry 111, 112, 113	4	4	4	English 211, 212, 213	3	3	3
English 101, 102, 103	3	3	3	Horticulture 101, 102, 103	3	3	3
*Math 111, 112, 113	3	3	3	Poultry Husbandry 201, 202	3	3	
Physical Education 11, 12, 13	1	1	1	Psychology 242			3
				Education 201			3
				Air Science 251, 252, 253	1	1	1
				Physical Education 20's, 50's	1	1	1
				*Electives			3
	16	16	16		17	17	17

*Biochemistry 161-2-3. III

**Animal Science, Plant Science, Agronomy 203, 213, Biology 101-2, P. H. 203 instead of Art, Education and Psychology.

COURSES IN AGRICULTURE

Undergraduate

111-12-13. *Agricultural Orientation*. (3) Designed to orient freshmen in agriculture to the life of the University and into the field of agriculture. Required of freshmen. One lecture.

303. *Family Food Supply*. (3) Deals with the production and preservation of the farm family food supply, including vegetables, fruits, dairy products and meats. Two lectures and one laboratory period.

DEPARTMENT OF AGRICULTURAL EDUCATION

HENRY L. TAYLOR, Ph.D., Head

The Department of Agricultural Education is designed primarily to prepare students to teach vocational agriculture in secondary schools of Tennessee. Students may major in this department without taking the prescribed courses for teacher certification. Such students must complete a minimum of 198 quarter hours of credit. The general curriculum for freshmen and sophomores in Agriculture will serve as a basic guide for such majors. Changes in the junior and senior years will be made in accordance with the needs of the students.

To qualify for teaching vocational agriculture in Tennessee, a student must complete 207 quarter hours including all required courses with 18 quarter hours in Agricultural Education and 24 hours in education and psychology. For a minor in Agricultural Education a student must complete 18 quarter hours in the subject. The degrees of bachelor of science and master of science are offered in this department.

CURRICULUM IN AGRICULTURAL EDUCATION

All freshmen and sophomore students take courses outlined in the general curriculum for freshmen and sophomores.

Junior Year Name of Course	Quarter Hours Credit			Senior Year Name of Course	Quarter Hours Credit		
	I	II	III		I	II	III
Agricultural Economics 301, 302	3	3		Agronomy 401	3		
Agricultural Engineering 202, 302		3	3	Psychology 463	3		
Health 151	3			Agricultural Economics 403			3
Poultry Husbandry 302		3		Agricultural Education 471a, 471c, 472, 450		18	
Horticulture 363			3	Agricultural Engr. 303			3
Psychology 243		3		Animal Husbandry 401, 403	3		3
Education 301	3			Education 463	3		
Music 131			3	Political Science 221			3
Sociology 211, 212, 213	3	3	3	*Electives	3		3
Psychology 312		3					
Animal Husbandry 311	3						
Education 387			3				
*Electives	3		3				
	18	18	18		15	18	15

COURSES IN AGRICULTURAL EDUCATION

302. *Teaching Agriculture in the Secondary Schools*. (3) A study of the factors to be considered in determining what to teach and how to teach students enrolled in vocational agriculture classes including farm mechanics.

471a (401) *Survey and Analysis of Community Agriculture Problems*. (3) A study and analysis of current problems affecting farmers and prospective farmers

*Students must elect 9 hours in Technical Agriculture.

in selected communities. Such problems will serve as a basis for planning teaching units and supervised farm visits in vocational agriculture. Field work is required.

471b (402) *Material and Methods in Special Rural Education*. (3) A study of the factors which must be considered in determining what to teach and how to teach out-of-school rural youth and adults.

471c (412) *Planning Programs of Vocational Education in Agriculture*. (3) A study of the principles and practices involved in organizing and developing an annual and long-time program of work. Special attention is given to each major phase of vocational education in agriculture, with emphasis placed on ways and means of solving problems encountered by farmers and prospective farmers of given communities. Field work is required.

472 (422) *Student Teaching in Agricultural Education*. (9) A course designed to familiarize and give experience to prospective teachers of vocational agriculture in all phases of the program.

403. *Special Devices, Reports and Seminar*. (3) A study of the use of special devices to meet special situations. Reports to state and county authorities and means of carrying on publicity included.

433. *Methods of Organizing and Directing Supervised Farming Programs*. (3) Designed to give students a broad concept of planning comprehensive supervised farming programs in agriculture.

450. *Special Problems in Vocational Agriculture*. (3) A specific research problem dealing with some phase of agricultural education or other fields in agriculture.

COURSES IN AGRICULTURAL ENGINEERING

202. *Farm Mechanics*. (3) A general course in farm shop work to develop skills, judgement and resourcefulness in the selection, care and use of tools and materials for farm construction and repair work. One lecture and two laboratory periods.

302 (203) *Farm Buildings and Rural Electrification*. (3) A study of skills, judgment and resourcefulness in the construction and maintenance of farm buildings, and in the maintenance of rural electrification as it may be applied to the farm and farmstead. May include an analysis of building materials, and the development of skills involved in construction and maintenance. One lecture and two laboratory periods.

303. *Farm Power and Machinery*. (3) Includes the repair, operation and construction of tillage, seeding, and harvesting machinery, and such service implements as wagons, manure spreaders, and fertilizer distributors. A part of this course includes a study of the construction, operation, and servicing of gas engines and tractors in the laboratory. One lecture and two laboratory periods.

COURSES IN AGRICULTURAL ECONOMICS

201 (203). *Agricultural Economics*. (3) A study of the historical perspective on present-day agriculture; adjustment of agriculture to natural and economic environment; principles of production and comparative advantage of crops and livestock on farms in Tennessee and the United States; land utilization, farm problems, and the government. Two lectures and one laboratory period.

301. *Agricultural Marketing*. (3) A study of the historical development of agricultural marketing; characteristics of consumer demand and the agricultural supply; channels and agencies of distribution; and the costs, functions, and services involved in marketing farm products. Two lectures and one laboratory period.

302. *Farm Management*. (3) A study of the operation of farming as a business, analysis of farm records and accounts; factors affecting profits and size of the farm business; and ways of getting started in farming. Two lectures and one laboratory period.

311. *Farm Records and Accounts*. (3) A study of the principles and techniques involved in keeping farm records and accounts; inventory, compiling,

analyzing and interpreting farm financial and operating statements. Two lectures and one laboratory period.

312. *Marketing Methods and Problems.* (3) A study of the methods and economic factors involved in the marketing of farm crops, poultry, eggs, live-stock, and dairy products; marketing system and marketing costs; supply and demand; marketing cost reduction. Two lectures and one laboratory period. Prerequisite: Agricultural Marketing 301.

322. *Farmers' Cooperative.* (3) A study of the history and present status of farmers' cooperatives; what they have done and tried to do for farmers; their problems, finance, and control. Two lectures and one laboratory period.

323. *Land Economics.* (3) A study of the income, valuation, taxation, and classification of land with special emphasis upon the land in Tennessee. Consideration will be given to the economic principles of conservation; minerals and power resources. Two lectures and one laboratory period.

331. *Land Appraisal.* (3) A study of factors governing the utilization and price of land; the appraisal process and other factors affecting the land. Consideration will be given to deeds, mortgages, leases and project development. Two lectures and one laboratory period.

401. *Tabular and Graphic Presentation of Data.* (3) A study of the principles involved in the collection, tabulation and interpretation of agricultural data with special emphasis upon the construction and use of tables, charts, and graphs. Two lectures and one laboratory period.

402. *Agricultural Prices.* (3) Concerned with the analysis of prices and price movements of farm products and the relation of prices of farm products to other prices. Consideration given to agricultural outlook, production cycles, and price forecasts. Two lectures and one laboratory period.

403. *Agricultural Finance.* (3) A study of the kinds and sources of credit for farmers; costs, risks, and returns in agricultural finance. Two lectures and one laboratory period.

411. *Agricultural Policy and Programs.* (3) A study of the local, state and federal agricultural policies and programs with emphasis on techniques and procedures.

413. *Farm Costs and Farm Labor.* (3) A study of unit costs; methods of measuring and reducing unit costs including equipment and building costs. Special attention given to farm labor and its effect upon farm organization and management as well as wages, hours, insurance and other problems. Two lectures and one laboratory period.

450. *Senior Project in Agricultural Economics Research.* (3) A study and discussion of senior projects on which students have been working (under direction) for at least one quarter.

451-52. *Special Problems in Agricultural Economics Research.* (6) A program designed to give first-hand experience to individuals who plan to engage in graduate study or governmental work. It deals with the construction of schedules; gathering, tabulating, and interpreting data. Field work is required. Prerequisite: Agricultural Economics 450.

DEPARTMENT OF ANIMAL SCIENCE

ROLAND NORMAN, Ph.D., Head

The department of Animal Science consists of three (3) areas of instruction, namely, Animal Husbandry, Poultry Husbandry, and Biochemistry. A curriculum is offered in each of these areas. The courses are designed to give instruction in the principles of livestock production and management, sanitation and health and processing and caring for animal products. Students are trained for the successful operation of livestock and poultry enterprises as owners, dairy farm operators, herd managers, market milk producers, extension livestock specialists, and for employment as agricultural biochemists, animal nutritionists, and other research workers.

CURRICULUM IN ANIMAL HUSBANDRY

ROLAND NORMAN, Ph.D., Coordinator

A major in Animal Husbandry is offered leading to the degree of bachelor of science. To satisfy the requirements for the degree, the student must complete a minimum of 198 quarter hours. Not less than 36 hours must be completed in the major field, with a minimum of 15 hours in 300 and 400 level courses. Students who desire to minor in Animal Husbandry must complete a minimum of 18 quarter hours in the department.

Work leading to the degree of master of science is also offered.

CURRICULUM IN ANIMAL HUSBANDRY

Freshman and sophomore students take courses outlined in the general curriculum for freshmen and sophomores.

Junior Year Name of Course	Quarter Hours Credit			Senior Year Name of Course	Quarter Hours Credit		
	I	II	III		I	II	III
Chemistry 361	4			English 321-322	3	3	
Biochemistry 302-3 ..		4	4	Agronomy 401-3	3		3
Poultry Husbandry				Agricultural Engi- neering 401	3		
302			3	Agricultural Eco- nomics 312		3	
Biology 241	4			Animal Husbandry			
Agricultural Economics				401-2-3	3	3	3
302		3		Animal Husbandry 450			3
Animal Husbandry				Animal Husbandry			
301-3	3		3	421-22-23	1	1	1
Animal Husbandry				Animal Husbandry			
311-12-13	3	3	3	322		3	
Animal Husbandry				Biology 241	4		
321		3		**Electives		6	6
**Electives	3	3	3				
	17	16	16		17	19	16

COURSES IN ANIMAL HUSBANDRY

Undergraduate

101. *Introductory Animal Husbandry.* (3) Devoted to the adaptation of the different classes of farm livestock to varying farm conditions and to the relationship of each class to the other in different farm plans. A careful study of correct type of livestock in relationship to economical production and market demands. Two lectures and one laboratory period.

102. *Livestock Management.* (3) Deals with the care and management of farm livestock, including dehorning, castrating, vaccination, parasite control, preparation for show and sale, and general feeding practices. Two lectures and one laboratory period.

103. *Introduction to Dairying.* (3) A study of the place of dairying in agriculture, utilization of dairy products, breeds of dairy cattle, composition of milk, processes of dairy manufacturing, herd management and the relationship of the farm to dairy herd operation. Two lectures and one laboratory period.

211. *Introduction to the Care and Riding of Light Horses.* (3) Designed for men and women of the University who are interested in horseback riding. Elementary principles in feeding, housing, training and riding light horses given; the proper care and adjustment of riding equipment also stressed. One lecture and two laboratory periods.

301. *Sheep Production.* (3) A study of the origin, importance, distribution, methods of production, and economic value of sheep. Practice given in training, judging and grading. Two lectures and one laboratory period.

303. *Animal Breeding.* (3) A study of the physiology of reproduction, heredity and environment, genetics of domestic animals, lethals, methods of

selection with different classes of livestock and mating systems, and functions of the progeny test. Prerequisite: Biology 311. Three lectures.

311. *Feeds and Feeding*. (3) A study of the basic principles of feeding farm animals, feeding standards, balancing rations, composition and nutritive value of feeds. Two lectures and one laboratory period.

312. *Livestock Fitting and Judging*. (3) Designed to teach the principles and provide practices in training, fitting and judging livestock. One lecture and two laboratory periods.

313. *Diseases and Parasites*. (3) A study of the causes, symptoms and treatment of general diseases and parasites of livestock with special emphasis on sanitation. Prerequisite: Biology 241. Two lectures and one laboratory period.

321. *Swine Production*. (3) A study of the breeding, management, feeding and marketing of swine. Emphasis placed on both purebred and commercial production. Two lectures and one laboratory period.

322. *Beef Cattle Production*. (3) History, development, and distribution of breeds; sources of cattle and carcass beef, production and distribution in cattle feeding, commercial and purebred breeding herds. Performance testing and S-10 Beef Cattle Programs. Two lectures and one laboratory period.

331. *Fundamentals of Dairy Manufacturing*. (3) A study of the role of the dairy manufacturing industry; dairy manufacturing processes: pasteurization, separation, homogenization; refrigeration. Prerequisites: An. Hus. 103; Chem. 111-12-13. Two lectures and one laboratory period.

401. *Market Milk*. (3) A study of the procurement, processing and sale of milk and the bacteriological, chemical and physical aspects of market milk processing. Prerequisites: A. H. 103. Two lectures and one laboratory period.

402. *Meat and Meat Products*. (3) A study of practices in butchering, cutting, processing and preserving farm meats. Two lectures and one laboratory period.

403. *Dairy Farm Operations*. (3) A study of general farm operation, adaptation of the herd to available facilities, factors affecting production, balancing rations for dairy cattle, disease control, principles of modern dairy cattle breeding, arrangement and development of dairy farm buildings. Prerequisites: Animal Husbandry 201-311. Two lectures and one laboratory period.

413. *Judging Dairy Products*. A study of the standards and grades of dairy products and extensive practice in judging milk and dairy products. One lecture and two laboratory periods.

421-22-23. *Seminar*. (3) Devoted to discussions of current literature and problems in animal husbandry. Required of seniors majoring in the department. One hour credit each quarter. One lecture.

450. *Senior Project*. (3) Required of all Animal Husbandry majors.

(All electives must be taken with the approval of the major adviser.)

** Liberal Education Core.

CURRICULUM IN BIOCHEMISTRY

(Agricultural and Biological Chemistry)

The curriculum in Biochemistry has the following threefold objective: (1) to offer courses for students in the several departments of the School of Agriculture and Home Economics, whose programs of study require such training; (2) to implement a program of training for students who wish to lay a foundation for and concentrate their major study in the field of biochemistry and nutrition; and (3) to provide instruction in the fundamentals of biochemistry for students in other departments of the university.

Students pursuing this curriculum must complete a minimum of 198 quarter hours for the bachelor of science degree, of which not less than 66 quarter hours must be in 300 and 400 level courses. A minimum of 52 hours must be completed in chemistry and biochemistry with a minimum of 15 hours in the 300 and 400 level courses. Students following this curriculum should select a

minor consisting of a combination of courses above the 100 level from related fields of agriculture and the biological sciences, comprising not less than 18 hours approved by the major adviser.

Students completing requirements for the bachelor of science degree with concentration in biochemistry and nutrition, should plan to pursue graduate study at least to the master's degree. This additional training will prepare one for employment in laboratories of federal and state departments of agriculture, in agricultural experiment stations, with meat packing and food processing companies and with other industries of this sort that employ technically trained staffs for control and research work.

Students who pursue this curriculum must arrange with their major adviser to take in the freshman year either Mathematics 161-2-3, or Mathematics 131-2-3 followed by 163 in the sophomore year, instead of Mathematics 141-2-3. They should also arrange to take Chemistry 311-12-13 in the sophomore year.

Sophomore Year				Junior Year			
Quarter				Quarter			
Name of Course	I	II	III	Name of Course	I	II	III
Chemistry 311-312-313...	4	4	4	Chemistry 211-212-213...	4	4	4
Electives	3	3	3	Physics 221-222-223	4	4	4
English 211-212-213	3	3	3	Biochemistry 302-303 ..		5	5
Physical Ed. 20-50.....	1	1	1	Foreign Language	3	3	3
Mathematics 261-262-263	5	5	5	Electives	6	2	2
Air Science	1	1	1				
	17	17	17		17	18	18

Senior Year			
Quarter			
Name of Course	I	II	III
Chemistry 481-482-483..	4	4	4
Biochemistry 402-403 ..		3	3
Biochemistry 411			2
Biochemistry 450		3	
Foreign Language	3	3	3
Electives	10	3	4
	17	16	16

COURSES IN BIOCHEMISTRY

Undergraduate

301. *General Agricultural Biochemistry*. (4) Introduces the student to the essentials of agricultural and biological chemistry as applied to animal and crop production. Prerequisites: Chemistry 111-12-13 and General Biology or Zoology and Botany. Required of agricultural education majors. Three lectures and recitations and two laboratory periods per week.

302-3. *Fundamentals of Biochemistry*. (8) An introductory study of the chemical nature of the constituents of protoplasm. A survey of mineral and organic foods and of nutritions. Required of majors in agricultural biochemistry, animal husbandry and poultry husbandry. Elected by students in other science fields. Prerequisites: General Chemistry, Organic Chemistry, and Biology or Zoology. Three lectures and two laboratory periods per week.

312. *Quantitative Agricultural Chemistry*. (4) Deals with certain aspects of quantitative chemistry as applied to agricultural and food analysis. Prerequisites: Chemistry 111-12-13. Required of majors in agronomy and horticulture. Two lectures and two laboratory periods per week.

313. *Physiological Chemistry*. (5) Presents the fundamentals of human physiological chemistry. Required of majors in foods and nutrition. Prerequisite: Chemistry 361. Three lectures and recitations, and two laboratory periods per week.

402-3. *General Biochemistry*. (8) A comprehensive study of the chemistry and biochemistry of carbohydrates, lipids, proteins, enzymes, vitamins and minerals important in the metabolism and nutrition of animals and plants.

Required of biochemistry majors. Prerequisites: Chemistry 111, 112, 113, 211 12-13, 311-12-13; Biochemistry 302-3. Three lectures and two laboratory periods per week.

411. *Biochemical Analysis*. (4) Designed to familiarize the student with the principles and practices involved in the analysis of agricultural and food products and other biological materials. Prerequisites: Analytical and Organic Chemistry; and Biochemistry 302-3. One lecture and three laboratory periods per week.

423. *Seminar*. (1) A discussion by the students of biochemical literature understandable on the senior level. One meeting per week.

450. *Senior Project in Biochemistry*. (3) A special laboratory investigation is carried out under the direction of the instructor and the results are written up scientifically. Required of candidates for the bachelor's degree with majors in biochemistry. Hours arranged.

CURRICULUM IN POULTRY HUSBANDRY

The curriculum in Poultry has been set up to prepare students for the successful operation of poultry enterprises, either as owners or managers; for extension and research work; and for positions with the U. S. Department of Agriculture. Courses leading to the bachelor of science degree are offered.

To satisfy the requirements for a major in poultry husbandry leading to the bachelor of science degree, a student must complete a minimum of 198 quarter hours of which 61 quarter hours must be in 300-and 400-level courses. A minimum of 36 hours must be completed in poultry husbandry and closely related subjects, with not less than 15 hours in 300 and 400 courses. Eighteen hours in a minor field must also be completed. Guidance in determining courses to pursue will be provided by the student's major and minor advisers.

The poultry enterprise is equipped with laying, breeding, brooding, and nutritional study units. It has a flock of chickens of the two leading types, including four major breeds; turkeys, ducks, and geese. Modern incubators, refrigeration unit, killing and processing equipment, and a feed mixer are available for students in training. Adequate facilities are available for research in nutrition, breeding, hatchability, and disease. The entire laying flock is pedigree bred; sufficient record equipment and assistants in record-keeping enable the personnel to plan and carry out many demonstrations and research projects that are useful to students.

Junior Year Name of Course	Quarter Hours Credit			Senior Year Name of Course	Quarter Hours Credit		
	I	II	III		I	II	III
Poultry Husbandry 302		3		Poultry Husbandry 450			3
Poultry Husbandry 303			3	Poultry Husbandry 402		3	
Poultry Husbandry 342		3		Poultry Husbandry 403			3
Poultry Husbandry 343			3	Poultry Husbandry 422		3	
Biology 432	4			English 322		3	
Chemistry 361	4			Poultry Husbandry 301	3		
Agricultural Economics 312		3		Biology 241	4		
Biochemistry 302-3		4	4	Electives	10	9	12
Electives	10	5	8				
	18	18	18		17	18	18

*Electives chosen with approval of the adviser.

COURSES IN POULTRY HUSBANDRY

201. *Principles of Poultry Production*. (3) The principles and practices underlying reproduction and growth of the domestic fowl; also the study of breeds, varieties, and types of poultry. Required of majors in Agriculture. Two lectures and one laboratory period.

202. *Principles and Practices of Incubation and Brooding*. (3) Designed to give the environmental factors affecting incubation, embryo development, operation of incubators, and methods of brooding. Required of majors in Agriculture. Two lectures and one laboratory period.

203. *Turkey Management*. (3) The study of turkey breeds and breeding, principles of incubation and brooding poult, and turkey meat production. Two lectures and one laboratory period.

302. *Animal and Plant Genetics*. (3) A study of the fundamental laws of heredity and their relation to plants and animals. Two lectures and one laboratory period.

301. *Poultry Management*. (3) A detailed study of all phases of farm and commercial poultry that will include buying chicks, incubation, brooding, managing the growing flock, and handling the layers. Two lectures and one laboratory period.

303. *Processing Poultry Products*. (3) A detailed study of grades and classes of market poultry and eggs; methods of processing, storage, preservation; and problems in plant operations. Two lectures and one laboratory period.

342. *Hatchery Management*. (3) Includes the history, development, and operation of incubators. Also egg supply, hatchery records, and accounts, and the sale of chicks. Two lectures and one laboratory period.

403. *Poultry Hygiene and Sanitation*. (3) Designed to give the major principles underlying sanitation and disease prevention as applied to the poultry farm. Two lectures and one laboratory period.

422. *Poultry Nutrition and Feeding*. (3) Designed to give the students the major principles of poultry nutrition, including the nutrients required by poultry and means of supplying these nutrients under practical feeding conditions. Poultry feedstuffs, ration formulation, and feeding practices considered. Two lectures and one laboratory period.

450. *Senior Project*. (3) Junior research is conducted in some phase of poultry.

DEPARTMENT OF PLANT SCIENCE

FRED E. WESTBROOKS, Ph.D., *Head*

The department of Plant Science is a service area for the School of Agriculture. Two curricula are offered with a major in Agronomy and one in Horticulture, for students who wish special training in the science of the special areas.

A major may be pursued in either area leading to the degree of bachelor of science. A minimum of 198 quarter hours is required for the bachelor of science degree. Not less than 36 hours must be completed in the curriculum of the student's choice with a minimum of 15 hours in 300 and 400 courses.

Graduate students may pursue studies in plant science leading to the master of science degree in Plant Science.

CURRICULUM IN AGRONOMY

FRED E. WESTBROOKS, Ph.D., *Coordinator*

Freshman and sophomore students take courses outlined in the general curriculum for freshmen and sophomores.

Junior Year	Quarter			Senior Year	Quarter		
	Hours	Credit			Hours	Credit	
Name of Course	I	II	III	Name of Course	I	II	III
Agronomy 301-2-3	3	3	3	Agronomy 401-2-3	3	3	3
Chemistry 361	4			Agri. Economics 401	3		
Biochemistry 312		4		Animal Husbandry			
Animal Husbandry				402-3		3	3
302-311		3	3	Agronomy 450	3		
Agri. Economics 301-2	3	3		Agronomy 411-12-13	1	1	1
English 321-23	3		3	Agron. 321-2-3	3	3	3
Horticulture 343			3	Electives	6	6	6
Poultry Husbandry							
302		3					
Horticulture 363			3				
Elective (Soc. Sci.)	3		3				
	16	16	18		16	16	16

Minor in Agronomy

Agronomy 301	Agronomy 401
Agronomy 302	Agronomy 402 or Biochemistry 312
Agronomy 303	Agronomy 403

COURSES IN AGRONOMY

201. *Field Crops*. (3) A study of the different uses of land crop characteristics, adaptations, culture and use. Two lectures and one laboratory period.

202. *Soils*. (3) An introduction to the study of the principles of soil formation, the nature and properties of soil and their relation to plants. Prerequisites: Chemistry 111-12-13. Two lectures and one laboratory period.

203. *Soil Fertility*. (3) A study of soil factors as related to soil fertility maintenance, and fertilizer practices. Two lectures and one laboratory period.

213. *General Agricultural Botany*. (4) Designed to provide a broad understanding of the fundamental facts and principles of botanical sciences. Three lectures and two laboratory periods.

301. *Sorghums and Small Grains*. (3) Deals with the distribution, culture and use of the cereal grains and their climatic adaptation. Two lectures and one laboratory period.

302. *Cotton and Tobacco*. (3) A study of the principles of cotton and tobacco culture, fertilizing, producing, grading, classifying and marketing. Two lectures and one laboratory period.

303. *Forage and Pastures*. (3) A study of the characteristics and uses of the important forages and pasture crops of Tennessee. Two lectures and one laboratory period.

321. *Farm Weeds*. (3) A one-quarter course of laboratory and field work on the identification, eradication, and economic value of the important weeds of fields and pastures. Elective for any department. Two lectures and one laboratory period.

322. *Plant Pathology*. (3) A study of the diseases of the most important agricultural plants of Tennessee and the South. Emphasis on the nature of the disease, recognition and control measures. Two lectures and one laboratory period.

323. *Economic Entomology*. (3) Provides a brief review of the structure, morphology, controls and the recognition of economic insects as related to agriculture. One lecture and two laboratory periods.

401. *Soil and Water Conservation and Management*. (3) A study of tillage, drainage, fertilization and rotation practices as they affect the productive capacity of field soils. One laboratory period and two lectures.

**402. *Advanced Soil Fertility*. (3) A study dealing with the determination of nutrient deficiencies in soils and plants by rapid methods, and recommenda-

tions of corrective measures. Prerequisites: Soil Fertility 203, Chemistry 361, Biochemistry 312. Two lectures and one laboratory period.

**403. *Legumes*. (3) A study of the characteristics and uses of the important legumes in Tennessee and the United States, their ecological adaptations, fertilization and management. Two lectures and one laboratory period.

411-12-13. *Seminar*. (3) Includes the discussion of current topics, lectures and demonstrations in Agronomy and related areas.

**450. *Senior Project*. (3) Required of all agronomy or horticulture majors.

CURRICULUM IN HORTICULTURE

HAZO W. CARTER, Ph.D., Coordinator

All freshman and sophomore students take courses outlined in the General Agricultural Curriculum for freshmen and sophomores.

Junior Year	Quarter			Senior Year	Quarter		
	Hours	Credit			Hours	Credit	
Name of Course	I	II	III	Name of Course	I	II	III
Horticulture 302-3		3	3	Horticulture 401-2-3	3	3	3
Horticulture 331-2-3	2	2	2	Horticulture 423			3
Horticulture 321	3			Horticulture 451	3		
Horticulture 343			3	Horticulture 450			3
Horticulture 352		3		Horticulture 443			3
Horticulture 372			3	Biochemistry 312		4	
Philosophy 323		3		Agronomy 401-2	3	3	
Agri. Economics 312		3		English 321-2	3	3	
Home Management 323			3	History 201-2-3	3	3	3
Chemistry 361	4			Electives	3	3	3
Biology 311	4						
Sociology 221-322	3	3					
Political Science 313			3				
	16	17	17		18	19	18

Minor in Horticulture

Horticulture 302	Horticulture 332	Horticulture 403
Horticulture 303	Horticulture 333	
Horticulture 331	Horticulture 343	

COURSES IN HORTICULTURE

Undergraduate

101. *Principles of Fruit Growing*. (3) A study of the principles and practices involved in the culture of orchard plants. Two lectures and one laboratory period.

102. *Ornamental Horticulture*. (3) An elementary course of principles and practices involved in the production of flowers and ornamental plants. Two lectures and one laboratory period.

103. *Vegetable Gardening*. (3) A basic study of the principles and practices of vegetable production. Two lectures and one laboratory period.

**302-3. *Commercial Vegetable Production*. (6) Deals with the principles and practices of commercial vegetable production and study of varieties, cultural practices, insect and disease control, grading, packing, storing and marketing. Two lectures and one laboratory period.

**321. *Processing of Fruits and Vegetables*. (3) A study of current practices in the processing of fruits and vegetables. In addition to laboratory work, the course includes visits to freezing and dehydrating plants, and canning factories. One lecture and two laboratory periods.

331-2-3. *Technical Skills in Horticulture*. (6) Aims to develop technical

*Courses offered in odd years only.

**Courses offered in even years only.

skills necessary for production of fruits, vegetables and ornamental plants. Required of all students majoring and/or minoring in horticulture. Two laboratory periods.

343. *Propagation of Horticultural Plants.* (3) A study of the methods of propagating horticultural plants including seedage, cuttage and grafting of both economic and ornamental plants. Two lectures and one laboratory period.

*352. *Floriculture.* (3) A course dealing with the principles underlying culture of greenhouse crops, commercial cut flowers and house plants.

363. *Forestry.* (3) A study of forest conservation and management and the relation of forestry to agriculture, including the influence of the forest on climate, streamflow and erosion. Two lectures and one laboratory period.

*372. *Landscape Plants and Design.* (3) A study of landscape composition dealing with the designing of small lots, city property, public grounds and large estates. The use of ornamental plants such as trees, shrubs and flowers and their identification.

*401. *Handling, Storage and Utilization of Fruits and Vegetables.* (3) The important factors in harvesting and handling fruits and vegetables that affect quality and marketability. Two lectures and one laboratory period.

*402. *Orchard and Small Fruit Culture.* (3) Deals with the study and practices in propagating, planting, pruning, cultivating, fertilizing, spraying, and thinning orchard and small fruit crops. Two lectures and one laboratory period.

*403. *Growth and Development of Fruits and Vegetables.* (3) Deals with the factors affecting growth, development and quality of fruits and vegetables. Two lectures and one laboratory period.

*423. *Types and Varieties of Fruits and Vegetables.* (3) Deals with the taxonomy, origin, history, characteristics, adaptation, identification, classification, exhibition and judging of kinds and varieties of fruits and vegetables. The value of the course depends to a great extent upon gaining an acquaintance with the plant material as it grows. Two lectures and one laboratory period.

*443. *Breeding of Horticultural Plants.* (3) A study of the principles and methods of genetics as applied to the breeding and improvement of horticultural crops. Two lectures and one laboratory period.

450. *Senior Project in Horticulture.* (3) Individual student research and presentation of a special topic or problem selected by the student and approved by the adviser. Prerequisite: Senior standing.

451. *Floral Design.* (3) A course dealing with the essentials of flower arrangement. One lecture and two laboratory periods.

DEPARTMENT OF HOME ECONOMICS

General Information

The department of Home Economics aims to guide students in developing a sound and satisfying philosophy of life, using intelligence in solving personal and family problems, preparing for vocations, developing wholesome social relationships and enriching their general and cultural education.

The Home Economics Department is located in the Women's Building and includes the following curricula: Child Development and Family Relationships, Clothing and Textiles, Foods and Nutrition and Home Economics Education.

Students who transfer from other institutions to complete requirements for the bachelor of science degree with a major in any of the curricula of Home Economics must complete at this institution a minimum of one academic year and earn a minimum of 48 hours of credit.

Home Economics Club

The Tennessee A. and I. State University Home Economics Club is affiliated with the American Home Economics Association. Home Economics majors who are interested in professional home economics and in homemaking are en-

- *Courses offered in odd years only.
- **Courses offered in even years only.

couraged to become members of the organization. Home Economics Education majors are required to participate as an integral part of their training to become advisers of the New Homemakers of America.

The major purpose of the American Home Economics Association College Club is to improve education for the profession of home economics.

The club gives a cash award annually to the member in each of the four college classes who has maintained the highest scholastic average above 3.0 for that year.

CURRICULUM IN HOME ECONOMICS EDUCATION

MATTY C. FLOWERS, M.S., Coordinator

The curriculum in Home Economics Education is designed for students who plan to teach home economics. This curriculum meets the requirements set up by the State Board of Education for the Teachers Provisional Certificate endorsement to teach home economics in Tennessee and qualifies graduates to teach in vocational schools under the requirements of the Federal Vocational Education Acts.

The undergraduate major consists of 205 quarter hours, 101 of which are in the 300 and 400 series. A minimum of 106 quarter hours must be taken in home economics, 79 of which are in the 300 and 400 series.

Freshman Year Name of Course	Quarter Hours Credit			Sophomore Year Name of Course	Hours Credit		
	I	II	III		I	II	III
English 101-2-3	3	3	3	Education 201	3		
Clothing 111-112	3		3	English 211-212	3	3	3
Related Art 201-3		3	3	Clothing 211-212	3	3	
Foods 111-112	3	3		Biology 241	4		
Chemistry 111-112-113 ..	4	4	4	Zoology 202-203		4	4
Home Economics				Psychology 242-243	3	3	
101-2-3 or 201	1	1	1	Economics 211-212		3	3
Mathematics 200		3		Nutrition 211			3
Music 131			3	Foods 223			3
Physical Ed. 11-12-13 ...	1	1	1	Physical Ed. 20's-50's ...	1	1	1
	15	18	18		17	17	17

Junior Year Name of Course	Quarter Hours Credit			Senior Year Name of Course	Hours Credit		
	I	II	III		I	II	III
Psychology 463		3		Child Development 452.	3		
Clothing 321	3			Family Relationships			
Child Development 351.	3			463			3
Home Management				Home Management			
320-322-323	3	3	3	421-2			4
Chemistry 361	4			Home Management			
Home Economics				433	3		
Education 471A-471B		3	3	Home Furnishings 400.	3		
Nutrition 311		3		Home Economics			
Sociology 211-322	3	3		Education 450	3		
Philosophy 323		3		Home Economics			
Electives			12	Education 471C		3	
	16	18	18	Home Economics			
				Education 472		9	
				Home Economics			
				Education 471D		3	
				Foods 431		3	
				Related Art 421	3		
				Electives	3		
					18	18	16

COURSES IN HOME ECONOMICS EDUCATION

H. E. 101-2-3. *Orientation*. (3) A course required of all freshmen registered in the Department of Home Economics. Designed to orient the student into the field of home economics and to the life of the University, to give her an appreciation of home economics as both a general and a professional education field, and to acquaint her with opportunities for study and employment in the various areas within the field of home economics. One lecture. One hour credit per quarter.

H. E. 201. *Guidance*. (3) A guidance course required of all transfer students entering above the freshman year and of all others who have not had Home Economics 101. The course is designed to acquaint students with professional opportunities, courses and requirements in the various fields of activity for which the Department of Home Economics offers curricula. Three lectures.

450. *Senior Project Writing*. (3) Designed to give students opportunity to select and develop problems of their choice in the area of home economics. A requirement for graduation.

471A. *Methods of Teaching Home Economics*. (3) Deals with a critical study of instruction methods, techniques, principles of teaching and philosophies of home economics. Emphasis is placed on the selection, organization and presentation of courses and lessons in the field of home economics and on the vocational home-making program as developed cooperatively with local, state and federal agencies. Must be scheduled within two quarters immediately preceding the quarter in which student teaching is scheduled. Three lectures.

471B. *Materials and Teaching Aids*. (3) Opportunity is provided for experimentation and operation of different teaching aids and procedures. Attention is given to the use of films, recordings, bulletin board and radio. Consideration is also given to the place of demonstration, discussion, field trips, home experiences and club work in the teaching of home economics. Prerequisite: Home Economics Education 471A. Three lectures.

471C. *Adult Education Methods in Home Economics*. (3) Deals with a survey of the organization, administration and recent developments in adult education with special emphasis upon the field of homemaking education. A study is made of teaching techniques and materials for adult classes in home-making. Three lectures. Laboratory practice will be arranged.

471D. *Problems of Curriculum and Teaching*. (3) A study of practical methods of organizing the curriculum and adapting its contents to pupil and community needs. Consideration is given to the part the curriculum plays in vitalizing the community and to the underlying principles involved. Three lectures.

472. *Observation and Student Teaching in Home Economics*. (9) Supervised observation and teaching in the public schools of Tennessee is provided. Problems of organization and supervision basic to induction of teachers into their profession will be stressed. Supervised teaching is done in off-campus teaching centers for a minimum of 8 weeks. Room and board while in the center will be paid by students. Prerequisites: 471A, 471B; Parallel: 471C, 471D and Foods 431.

COURSES IN FAMILY ECONOMICS AND HOME MANAGEMENT

320. *Household Equipment*. (3) Deals with the various types of household equipment, standard brands, their selection and care, and the study of problems concerned with the manufacture, marketing and servicing of the equipment of the home. Two lectures and one laboratory period.

322. *Problems of Family Finance*. (3) A study of ways in which family incomes are spent, and of the problems involved in family expenditures on food, clothing, housing, household operation, savings, health, education, etc. Three lectures.

323. *Family Health and Home Nursing*. (3) Designed to present the principles and practices essential for the maintenance of health and the prevention of illness in the family; some basic skills and techniques of simple nursing care in the home. Two lectures and one laboratory period.

421-2. *Home Management Residence*. (3, 1) 421—Residence. Care and management of apartment; planning, buying, preparing and serving meals; group living. Six weeks living-in experience. Required parallel: 422—Problems in Home Management. One hour theory course taught full term.

433. *Consumer Education*. (3) Includes a study of problems on market practices, the consumer and the market, methods of buying commodities and legislation governing labeling and branding. Three lectures.

441. *Advanced Consumer Buying*. (3) Deals with advanced study of marketing problems and consumer credit. Individual problems which concern technology of buying particular types of consumer goods analyzed and surveys are made of current legislation and consumer literature. Three lectures.

COURSES IN HOME ART AND MECHANICS

301. *Introduction to Home Furnishings and Interior Decoration*. (3) Planned to stimulate awareness and appreciation for the well-designed home and its furnishings as a background for living; experiences in creating objects for home and personal use.

303. *Problems in Room Decoration*. (3) Practical experiences in selecting and arranging furnishings in relation to a problem; includes work with draperies, bedspreads, slipcovers and other activities pertinent to the selected problem; scale drawing of floor plans and furniture; setting up a model room.

311. *Color Theory and Harmony*. (3) Application of principles of color theory and harmony approached from the decorator's point of view. Principles of water color painting and color harmony development; experimenting with paints and fabrics.

400. *General Home Furnishings and Interior Decoration*. (3) A general course in home furnishings and decorating designed to give basic principles and show how to use these principles in achieving results that are functional, beautiful, individual and personally satisfying. It provides opportunities for understanding the influences which housing has on the emotional and social development of family members and family life. The subject matter and laboratory activities are presented in the natural sequence for decorating a home, starting with color and continuing with furniture, fabric, accessories and arrangement.

401. *Advanced Home Furnishings and Interior Decoration*. (3) A continuation of 400 with a detailed study of a given problem. Color harmony planning, furniture selection and arrangement, fabric selection and construction of fabric furnishings, and accessory selection or construction. A campus interior is to be used in executing this problem.

403. *Wood Crafts*. (3) A study of basic procedure in making interesting and useful household items; techniques of sawing, nailing and fastening with screws; designing plywood items; assembling ready-cut items.

411. *Art Crafts*. (3) Includes color harmony; copying or designing stencils; cutting and applying stencils, brush-stroke painting; striping, varnishing and antiquing; painting tin, glass and fabrics.

CURRICULUM IN CHILD DEVELOPMENT AND FAMILY RELATIONSHIPS

RUTH A. McDOWELL, M.Ed., Coordinator

The Department of Child Development and Family Relationships offers opportunities for the study of the child and his family, with a nursery school as a laboratory for providing experiences in observing and guiding young children.

This major prepares students for work with pre-school children in nursery schools day-care centers, child-care agencies, institutions or private homes.

Students who meet the requirements of the University and complete (36) quarter hours in the department of Child Development and Family Relationships may receive a Bachelor of Science degree.

CHILD DEVELOPMENT AND FAMILY RELATIONSHIPS
Freshmen and Sophomore Years Same as Home Economics Education

Junior Year				Senior Year			
Quarter				Quarter			
Name of Course	I	II	III	Name of Course	I	II	III
Education 486	3			Psychology 311	3		
Sociology 211	3			Biology 311	4		
CD&FR 321	3			CD&FR 452	3		
CD&FR 351	3			CD&FR 463	3	3	
Psychology 263		3		CD&FR 461		3	
CD&FR 352		1		CD&FR 464		3	
Psychology 323			3	Sociology 452		3	
CD&FR 322			3	Home Management 421		4	
Home Management 323			3	CD&FR 465			3
Education 481			3	CD&FR 466			3-6
Electives	3	12	3	CD&FR 450			3
				Electives	3	3	6
	15	16	15		16	16	15-18

COURSES IN CHILD DEVELOPMENT AND FAMILY RELATIONS

321. *The Child's Play Environment.* (3) A study of the role of play in the young child's development. Emphasis placed on the selection, care and use of play materials and equipment for young children. Students are able to plan activities and to construct toys. One lecture and two laboratory periods.

322. *Courtship and Marriage.* (3) A study of dating, courtship and engagement—problems evolved before marriage and their effect on the ultimate success or failure in or out of marriage. Three lectures.

332. *Creative Arts for Young Children.* (3) Observation and analysis of the young child's use of plastic materials such as clay, paint, paper, wood, sand, etc. Students use these materials as well as study their selection, use and care. Open to freshman, sophomores and non majors.

351. *The Young Child and His Family.* (3) Emphasis placed upon the individual development of various family members. Consideration of family relations basic to an intelligent understanding of attitudes and behavior of children and young people. Observation of training procedures in the Nursery School. Two lectures and two laboratory periods.

352. *Nursery School Observation.* (1) Observation in nursery school along with Course 351. Required for majors only.

451. *Nursery School Organization.* (3) Organization and Administration, with emphasis on budgets, housing, equipment, program, records staff, parent cooperation, and student participation.

452. *Child Practicum.* (3) Observation and participation in the directing and guiding of young children in the nursery school. In the home and other situations. Prerequisites: CD and FR 351. One conference and four hours in Nursery School.

461. *The Growth of Children as Related to Guidance.* (3) A study of physical growth of children. Interpretation of growth norms. Factors influencing growth, such as nutrition, health and housing included. Prerequisites: CD and FR 351. Two lectures and one laboratory period.

463. *Personality Development and Family Relationships.* (3) Problems in family life. A study of modern life giving special emphasis to the activities of the home as they relate to the development of the family and its individual members.

464. *Later Periods of Childhood.* (3) A study of the development of the child from later preschool age through adolescence. Open to men and women of all schools. Prerequisites: CD and FR 351.

465. *Survey of Development Throughout Adulthood.* (3) Interrelation of

physical, psychological, and social development from early adulthood through maturity and old age; characteristic adjustment problems in these periods of life. Prerequisites: 3 credit hours in child development and family relationships, psychology, or sociology.

466. *Internship or Fieldwork.* (3-6) Opportunity is given students to do practice work in nursery schools in the community and other agencies caring for children as well as the campus practice laboratory. Taken with approval of head of department.

450. *Senior Project Writing.* A requirement of the University to be taken by every major in the department.

CURRICULUM IN CLOTHING AND TEXTILES

GERALDINE B. FORT, M.A., Coordinator

The curriculum in Clothing and Textiles offers courses designed to furnish a thorough knowledge of Clothing and Textiles from the standpoints of health, comfort and economy. It enables the student to understand the contribution which clothing makes to social and professional success; to select and enjoy clothes as an expression of beauty; and to construct them for creative self-expression.

It opens many possibilities to students who wish to use clothing in a general sense for their personal and family development, to those who have a well-defined vocational aim, and to those who anticipate graduate study.

A Bachelor of Science degree is offered in undergraduate work. One hundred and ninety-two (192) quarter hours are required for an undergraduate major, 48 of which must be in Clothing and Textiles, (including Related Art and Home Furnishings). See the curriculum outline for specific requirements.

For a minor in Clothing and Textiles, 27 hours of credit in courses approved by the major and minor professors are required.

Freshman Year				Sophomore Year			
Quarter				Quarter			
Name of Course	I	II	III	Name of Course	I	II	III
English 101-2-3	3	3	3	English 211-12-13	3	3	3
Clothing 11-12-13	3	3	3	Clothing 211-212	3	3	
Related Art 201-3		3	3	Sociology 211-212		3	3
Music 131			3	Speech 201	3		
Chemistry 111-112-113	4	4	4	Nutrition 211			3
Mathematics 200	3			Psychology 221-253	3	3	
Home Economics Education 101-2-3 or 201	1	1	1	Phy. Ed. 20's 50's	1	1	1
Physical Ed. 11-12-13	1	1	1	Clothing Elective			3
				General Elective			3
	15	15	18	Foods 111-112	3	3	
					16	16	16

Junior Year				Senior Year			
Quarter				Quarter			
Name of Course	I	II	III	Name of Course	I	II	III
Clothing 313-320-321	3	3	3	Clothing 401-413-450	3	3	3
Chemistry 361	4			Home Furnishings 400	3		
Economics 211-212		3	3	Home Management			
Child Development 351	3			322-433		3	3
Philosophy 323		3		Child Development 463	3		
Ele. Journalism 301-2-3	3	3	3	Art Electives	3	3	
General Electives	3	3	6	Clothing Electives	3		
	16	15	15	General Electives	3	6	9
					18	15	15

COURSES IN CLOTHING AND TEXTILES

Undergraduate

111. *Textiles*. (3) A practical consumer study of fabrics used for clothing and house furnishings including selection, use, and care. One lecture and two laboratory periods.

112. *Clothing Selection*. (3) Planned to help the freshman student meet her clothing problems. Emphasis placed on personal grooming, selection of appropriate clothing, clothing costs, commodity study of articles included in the wardrobe, and care of clothing. Open to all students. One lecture and two laboratory periods.

113. *Children's Clothing*. (3) A study of the physiological, psychological and aesthetic aspects of children's clothing. Selection, construction and care of clothing for infants and small children are chief phases. Prerequisite: Clothing 112. One lecture and two laboratory periods.

211. *Elementary Clothing Construction*. (3) Principles of clothing construction are applied to cotton, linen and synthetic fabrics. Use and care of sewing machines, sewing skills, and wardrobe inventory included. Open to all students. One lecture and two laboratory periods.

212. *Intermediate Clothing Construction*. (3) Principles of clothing construction are applied to synthetic and blended fabrics. Use of commercial patterns, principles of fitting and the use and care of sewing machines included. Prerequisites: Clothing 112. One lecture and two laboratory periods.

302. *Clothing of the Family*. (3) Based on the needs of students interested in child development, family relationships, teaching or social work. The study of family clothing problems from the standpoint of income, occupation, and health as well as aesthetic and psychological factors. Construction is included. Open to all students. Two laboratory periods.

313. *Renovation*. (3) Includes restyling, reconstruction, reclaiming, and repairing outmoded and discarded clothing and accessories. Open to all students. One lecture and two laboratory periods.

320. *Needle Craft*. (3) A study of the fundamental techniques of knitting, crocheting, embroidery and lacemaking. Open to all students. One lecture and two laboratory periods.

321. *Advanced Clothing*. (3) Deals with advanced construction methods. Emphasis placed on selection, construction and care of woolen garments. Prerequisite: Examination in construction skills. Juniors and seniors only. One lecture and two laboratory periods.

322. *Flat Pattern Adaptation*. (3) A study of the principles and techniques of flat pattern design with application of these principles to commercial pattern alteration. The development of original designs emphasized. One recitation and two laboratory periods.

401. *Problems in Clothing and Textiles*. (3) Special problems in the details of clothing construction, selection and textiles selected and solved by the students. Also problems met in student teaching reviewed. Newer trends in clothing construction emphasized. Prerequisites: Clothing 211, 212. One lecture and two laboratory periods.

413. *Dress Design and Draping*. A course in dress design with emphasis on originality and draping. Opportunity given to investigate sources of design and to practice various methods of designing. Prerequisites: Clothing 321. One lecture and two laboratory periods.

450. *Senior Project Writing*. (3) (With or without credit.)

CURRICULUM IN FOODS AND NUTRITION

MIRIAM L. McTEER, Ph.D., Coordinator

The objectives of the curriculum in Foods and Nutrition are threefold: To develop in each student (1) a sound, basic, up-to-date knowledge in the fields of

foods and nutrition, (2) the ability to interpret these basic facts and apply sound judgment to their translation to actual situations, and (3) the skills and techniques required to apply these basic principles to methods of preparation.

The curriculum in Foods and Nutrition leads to the degree of bachelor of science or bachelor of arts in Foods and Nutrition. The undergraduate major consists of a total of 202 quarter hours, 67 of which are courses in the 300 and 400 series. A minimum of 39 quarter hours must be taken in Foods and Nutrition, 15 of which must be taken in the 300-400 series.

Foods and Institutional		Chemistry	16 hours
Management	21 hours	Inorganic	12
Nutrition	18 hours	Organic	4
Clothing	9 hours	Human Physiology	8 hours
Home Management	7 hours	Biochemistry (Physiological)	5 hours
Child Development	3 hours	Mathematics	9 hours
		Bacteriology	4 hours

Students desiring the degree of bachelor of arts must elect to take the required years of a modern foreign language as specified under requirements for the bachelor of arts degree.

The curriculum below meets the requirements of the American Dietetic Association for entrance into an approved dietetic internship. It also meets the requirements of the liberal education core for students majoring in non-teaching fields.

Freshman Year				Sophomore Year			
Name of Course	Quarter Hours	Credit		Name of Course	Quarter Hours	Credit	
English 101-102-103	3	3	3	English 211-212-213	3	3	3
Home Economics Education 101-102-103 or 201	1	1	1	Zoology 202-203	4	4	
Clothing 111			3	Clothing 112	3		3
Foods 111-112	3	3		Clothing 211 or 313			3
Chemistry 111-112-113	4	4	4	Bacteriology 241	4		
Math. 111-112-113	3	3	3	Psychology 221-243-253	3	3	3
Physical Ed. 11-12-13	1	1	1	Nutrition 211	3		
	15	15	15	Foods 223			
				Chemistry 361		4	
				Art 133 or Music 131	1	3	
				Physical Ed. 20's-50's	1	1	1
					17	18	17

Junior Year				Senior Year			
Name of Course	Quarter Hours	Credit		Name of Course	Quarter Hours	Credit	
Related Art 201-203	3		3	Nutrition 411	3		
Speech 201-202	3	3		Sociology 322			3
Education 201	3			Foods 313	3		
History 201		3		Foods 321		3	
Foods 311		3		Foods 352			3
Foods 312			3	Foods 452	3		
Nutrition 311	3			Foods 412		3	3
Biochemistry 313			5	Nutrition 433		3	
Child Development 351	3			Nutrition 453		3	
Accounting 211-212	3			Nutrition 450	3		
Economics 211-212		3	3	Business Adm. 423	3		
Home Economics Education 471A-471B		3	3	Philosophy 323	3		
				Home Management 421-422			4
				Electives		6	6
	18	18	17		18	18	16

COURSES IN FOODS AND NUTRITION

Foods

111-12. *Food Buying and Preparation.* (6) The study of foods, including standards for selection, purchasing, preparing and serving foods for high nutritive value and analyses of simple principles involved in food cookery. One lecture and two laboratory periods. To be taken in sequence.

223. *Meal Planning and Table Service.* (3) Meal preparation and table service for various occasions, market plans, cost of meals, the nutritive value of food, the aesthetic aspect of meal planning. Open to majors in other areas who can qualify in consultation with instructors. One lecture and two laboratory periods.

311. *Science Related to Cookery.* (3) A study of the principles underlying the theoretical and practical aspects of food preparation. One lecture and two laboratory periods.

312. *Experimental Cookery.* (3) Designed to offer opportunity for independent laboratory work in the solving of practical problems in food preparation, a study of methods of scoring and standardizing experimental work. One lecture and two laboratory periods.

313. *Institutional Equipment.* (3) Includes study of the kinds, selection, care, cost and maintenance of individual pieces of equipment and their use and labor-saving devices in food service organizations.

321. *Food Preservation.* (3) A study of the planning and preserving of an adequate food supply for the year for the urban and the farm family. Laboratory work is done in various methods of food preservation. One lecture and two laboratory periods. Prerequisites: Foods 111-112.

352. *Food Demonstration.* (3) A study of the principles and techniques involved in foods, nutrition and equipment as applied to the needs of extension, business, classroom and community teaching. One lecture and two laboratory periods.

412. *Quantity Cookery.* (3) Deals with the problems of lunchrooms, cafeterias and tearooms for the general public, institutions and schools. Attention is given to methods of purchasing foods in quantity, organization of labor, standards of work materials, equipment and installation, meal planning and preparation in large quantities. One lecture and two three-hour laboratory periods.

431. *School Lunch.* (3) Planned to prepare for the management of school lunchrooms in connection with teaching. A survey is made of the problems of lunchroom management through field trips to lunchrooms of various schools.

452. *Organization and Management.* (3) Includes a study of institutional food departments, professional ethics and qualifications for managers, employment procedures, personnel schedules and financial records. It also includes menu analyses, the development of standardized recipes, schedules and standardized work procedures. One lecture and two laboratory periods.

Nutrition

211. *Elementary Nutrition.* (3) Includes the fundamentals of nutrition for health, a study of the essentials of an adequate diet, the food needs of persons of different ages and occupations and the nutritive values of common foods, with special emphasis on the relation of health to such knowledge.

212. *Nutrition for Elementary and Secondary Teachers.* (3) A general course in elementary nutrition and includes problems related to gross signs of good and poor nutrition, optimum diets for growing children, school luncheons to promote good growth and health, and methods and materials used in teaching children good food habits. Open to majors in other fields requiring instruction in the fundamentals of nutrition.

311. *Applied Dietetics.* (3) The fundamental principles of human nutrition as related to the construction of practical dietaries and in the application of these principles to the feeding of individuals, families and groups.

411. *Advanced Nutrition.* (3) A critical study of chemical and physiological factors in metabolism during prenatal life, infancy, childhood and normal adult life. Reports of recent research and their relation to problems of human nutrition. Prerequisites: Nutrition 211, Biochemistry 313.

433. *Child Nutrition.* (3) The study of the development of a health program for children as related to nutritive requirements and the planning of adequate dietaries. Prerequisite: Nutrition 211.

450. *Project Writing in Foods and Nutrition.* (3) Instructs the student in techniques of professional writing, literature searching and abstracting scientific material designed to assist each senior project. To be taken in the first quarter of the senior year.

453. *Nutrition and Diet Therapy.* (3) Designed to study the modifications of the normal diet in the treatment of disorders of digestion, metabolic disturbances and other pathological conditions of the body. Prerequisite: Nutrition 311. Two lectures and one laboratory period.

SCHOOL OF ARTS AND SCIENCES

CARL M. HILL, Dean

Faculty:

Department of Biology

Gladys B. Adams, Hubert B. Crouch, Richard A. Hogg, Dorothy S. Exum, George Hull, Samuel R. Whitmon, Henderson K. Wood, W. E. Bennett, and R. R. Johnson.

Department of Chemistry

David C. Gandy, Lonnie Haynes, Edward G. High, Carl M. Hill, Mary E. Hill, Gilbert W. Senter, Doris E. Simmons, Ruby P. Torrey, Samuel von Winbush, L. Davis, and S. Anderson.

Department of English

Leonard C. Archer, Laura M. Averitte, Mary F. Carter, Helen S. Cotton, E. G. Dozier, Juanita E. Horner, Robert J. Hudson, E. J. Jackson, Kenny Jackson, Alma Dunn Jones, Hinton C. Jones, Crawford B. Lindsay, Earl L. Sasser, Maxine Y. Sawyer, Vesta R. Wheaton, McDonald Williams, Rosa L. Williams, T. J. Miller, and M. B. Turner.

Department of Mathematics and Physics

Rutherford H. Adkins, Alger V. Boswell, Arthur S. Cary, Vivian J. Fielder, Pearl M. Gasaway, Sadie C. Gasaway, Clinton E. Jones, Calvin E. King, Mary Y. Love, Theodore A. Love, Frank Orndorff, L. H. Pennington, and Annie G. Sasser, R. A. Ewing, and Nancy R. Ledet.

Department of Modern Foreign Languages

Mary E. Johnson, Joe T. Myers, Virginia S. Nyabongo, Sarah M. Pereira, Dorothy J. Samuels, and Alma T. Watkins.

Department of Science Education

Alfred J. Aubry, Jimmuir Cotton, Henry H. Hymes, William N. Jackson, Alice C. Smith, Alfred C. Tyler, and Mazie O. Tyson.

Department of Social Sciences

Alice D. Archer, Gladys B. Butler, William F. Butler, Bernard Chadwick, George L. Davis, Merle R. Eppse, Cornelius Jones, Mabel W. Leathers, Lois H. McDougald, Mark Hanna McCann, Annie B. Martin, Kathleen H. Poag, Nora Lee Roy, Horace C. Savage, Mingo Scott, Alonzo T. Stephens, Dorothy A. Stephens, Edward S. Temple, Sherman N. Webster, and Raleigh A. Wilson.

Department of Speech and Drama

Eugene M. Batza, William D. Cox, Madelyn B. Houston, Troy L. Jones, Thomas E. Poag, Granville M. Sawyer, and Jame C. Williams.

SCHOOL OF ARTS AND SCIENCES

CARL M. HILL, Ph.D., *Dean*

Purpose

The general purpose of the School of Arts and Sciences is twofold: liberal and technical. The courses which make up its curriculum are offered in the areas of Humanities, Natural Sciences and Social Sciences.

Because of the breadth and fundamental nature of its curriculum and the necessity to acquire a reasonable mastery of a single field of concentration, the School of Arts and Sciences provides a basic undergraduate education for those students planning (1) to enter the professions, (2) to continue in graduate study, or (3) to engage, upon graduation, in the gainful occupations of American life.

Through the School of Arts and Sciences, the University grants the Bachelor of Arts and of Science degrees. The requirements for these degrees are satisfied normally in four years.

Types of Undergraduate Programs

Two types of undergraduate programs are offered in the School of Arts and Sciences; each leading to the Bachelor's degree. One program attempts to prepare the student for the teaching profession; the second program, for professions other than teaching.

In the teacher training program, the student selects a major field of concentration within the School of Arts and Sciences. The student then fulfills course requirements in the general curriculum pattern of: (1) general education core (60-66 quarter hours), (2) professional education core (36 quarter hours), (3) certification endorsement area (quarter hours vary) and, (4) electives (quarter hours vary). Upon successful completion of this program, the student should qualify for a secondary school teaching certificate in the State of Tennessee. The departments offering teacher certification curriculums are: Biology, Chemistry, Science Education, Mathematics, Modern Foreign Languages, Social Sciences, English, and Speech and Drama.

Several departments offer training for professions other than teaching. The purpose of these departments is to train students for successful performance as specialist in somewhat restricted fields of specialization.

General Requirements for a Bachelor's Degree

The University through the School of Arts and Sciences awards the Bachelor of Arts and Bachelor of Science degrees. All candidates for a Bachelor's degree must complete a minimum of 192 quarter hours (with a minimum average of "C") which include:

The General Education or Liberal Education courses (57 to 66 quarter hours)

A minimum of 66 quarter hours in 300 and 400 level courses

A minimum of 36 quarter hours in a subject or major field with a minimum of 15 quarter hours in 300 and 400 level courses

A minimum of 6 quarters of required health and physical education courses

A minimum of two years of basic Air Force Reserve Officers' Training Corps (men)

Nine quarter hours of English

Nine quarter hours of American history (for all students who do not present one year of American history on their high school transcripts)

A major program of studies within a department of the School

The senior year, or its equivalent (the last 48 quarter hours offered for the degree and the last nine months) in residence

The Junior English Proficiency Examination

A senior project

**Requirements for the Bachelor of Science Degree
(With Teaching Certification)**

To qualify for the Bachelor of Science degree with teaching certification, the student should complete the general requirements for a Bachelor's degree and other courses included in the following program.

1. General Education Core 60-66 qr. hrs.
 - Communication (English 101, 102, 103) 9 qr. hrs.
 - Health, Physical Education, Personal Development, and Home and Family Living 9 qr. hrs.
 - Humanities 15 qr. hrs.
 - Literature (9 quarter hours)
 - Two courses selected from Philosophy 323 or 301, Music 131 and Art 133
 - Modern Foreign Language at or above 200-level
 - Natural Science 12 qr. hrs.
 - Biology 101, 102, 103; Chemistry 111, 112, 113; Natural Science 121, 122, 123; or Physics 211, 212, 213
 - Social Science 12 qr. hrs.
 - Mathematics 3 or 9 qr. hrs.
 - Math 200 (3 hours) or
 - College Mathematics (9 hours)
2. Professional Education Core 36 qr. hrs.
3. Area of Endorsement 18-54 qr. hrs.
4. Other quarter hours to total the number required by the University and the major department.

**Requirements for the Bachelor of Science Degree
(Without Teaching Certification)**

To qualify for the Bachelor of Science degree without teaching certification, the student should complete the general requirements for a Bachelor's degree and other courses included in the following program.

1. Liberal Arts Core 57 qr. hrs.
 - Communication 9 qr. hrs.
 - English 101, 102, 103
 - Humanities 15 qr. hrs.
 - World Literature (English 211, 212, 213) and Two courses from Philosophy 323, Music 131, Art 133, Drama, and Modern Foreign Language above 100 level
 - Social Science 12 qr. hrs.
 - Selected from History, Sociology, Political Science, Geography, and Economics
 - Science 12 qr. hrs.
 - Selected from any one of the following courses: Biology 101, 102, 103; Chemistry 111, 112, 113; Physics 211, 212, 213 or 221, 222, 223; or Natural Science 121, 122, 123.
 - Mathematics 9 qr. hrs.
 - Selected from any three-quarter course in Mathematics, taken in sequence
2. Major Field Courses Minimum 36 qr. hrs.
3. Courses Related to the Major Field Courses and Quarter hours, adjusted by major department
4. Electives Courses and quarter hours, adjusted by major department

Requirements for the Bachelor of Arts Degree

To qualify for the Bachelor of Arts degree, the student should (1) complete the general requirements for a Bachelor's degree and other courses in the Liberal Education Core.

English 101, 102, 103	9 qr. hrs.
World Literature 211, 212, 213	9 qr. hrs.
Foreign Language (9-27 hours)	18 qr. hrs.
(See Foreign Language requirement below)	
Social Science	12 qr. hrs.
Natural Science	12 qr. hrs.
Mathematics	9 qr. hrs.
Philosophy, Music, Art, Drama	
(Combination of any two courses)	6 qr. hrs.

and (2) complete a program of studies in one of the following subjects: Biology, Chemistry, History, Mathematics, Sociology, Social Administration, Speech and Drama, English, Modern Foreign Languages, Geography, Physics, or Political Science.

Modern Language Requirement for The Bachelor of Arts Degree

The foreign language (French, German, or Spanish) requirement may be satisfied as follows:

- a. Students who present no (0) units of a foreign language in high school when they enter the University are to take twenty-seven (27) quarter hours of work in a foreign language, beginning with the freshman course in that language.
- b. Students who present two (2) units of a foreign language in high school and who desire to continue work in that same language may satisfy the language requirement by pursuing eighteen (18) quarter hours in that language, beginning with the sophomore course of that language.
- c. Students who present four (4) units of a foreign language in high school and who desire to continue work in that language may satisfy the language requirement by pursuing nine (9) quarter hours in that language, beginning with the junior course.

Proficiency Test in French, German, Spanish

Students who enter the University for the first time and who present two or more high school units in a foreign language may take a proficiency test in that language. A student's proficiency in a given language may alter the number of quarter hours required to satisfy the language requirement.

**PROVISION FOR PROFESSIONAL TRAINING IN
MEDICINE, DENTISTRY, AND NURSING**

The State Board of Education of Tennessee and Meharry Medical College have entered into an agreement whereby students classified as residents and citizens of Tennessee will be granted facilities for the study of medicine, dentistry and nursing at Meharry Medical College equivalent to the opportunities offered to students at the University of Tennessee. Residents of Tennessee who meet the proper qualifications will be charged the same tuition in medicine, dentistry and nursing at Meharry Medical College as is charged to students in these professional fields at the University of Tennessee.

**COMBINATION CURRICULA FOR THE STUDY OF
MEDICINE, DENTISTRY, NURSING, AND
CLINICAL LABORATORY TECHNOLOGY**

Curricula preparatory for the study of medicine, dentistry, nursing and clinical laboratory technology are offered at Tennessee A. and I. State University in cooperation with Meharry Medical College. Several of these curricula are joint programs between the two institutions and qualify students for the bachelor's degree.

Arts-Medical Combination Curriculum Leading to the Bachelor's Degree

The first part of this joint curriculum is offered regularly enrolled students at the Tennessee A. and I. State University who are pursuing a Bachelor of Arts or Science curriculum.

The first three years of this curriculum include courses designed (1) to offer adequate training in the basic sciences and (2) to promote broad cultural development. The following courses must be successfully completed:

1. Basic Science Courses: (52 to 56 qr. hrs.)	Qr. Hrs.
General Biology or Zoology with Laboratory.....	12
Inorganic Chemistry (to include physical chemistry of solutions).....	12
Qualitative and Quantitative Analysis.....	8
Organic Chemistry with Laboratory.....	8 to 12
General Physics with Laboratory.....	12
	52 to 56
2. Broad Cultural Subjects: (88 to 92 qr. hrs.)	
College Mathematics.....	9
English Composition.....	9
Electives: chosen in the student's major area of concentration and in subjects designed to promote broad cultural development.....	70 to 74
Total.....	144

The fourth year of the joint curriculum is offered those students who are admitted to the Meharry Medical College. At the successful completion of the freshman year curriculum in the School of Medicine at the Meharry Medical College, the student makes application to the Tennessee A. and I. State University for the Bachelor of Arts or Science degree. Upon joint recommendation of the Meharry School of Medicine and the Tennessee A. and I. State University, the student becomes a candidate for the Bachelor of Arts or Science degree. The degree is awarded by the Tennessee A. and I. State University.

Pre-Nursing Curriculum

The pre-nursing curriculum provides the necessary college preparation for entrance into the professional program of approved schools of nursing which offer the bachelor's degree in nursing. The curriculum is composed of the following courses:

First Year	Quarter Hours
Chemistry 111-2-3.....	12
English 101-2-3.....	9
Mathematics 131-2-3.....	9
History 121-2-3.....	9
Electives.....	6-9
Physical Education 11-12-13.....	3
	48 to 51
Second Year	Quarter Hours
Biology 101-2-3.....	12
History 201-2-3.....	9
Sociology 211-2-3.....	9
Psychology 211-2-3.....	9
Electives.....	9
Physical Ed. 20's to 50's.....	3
	51

Arts-Dental Combination Curriculum Leading to the Bachelor's Degree

The first part of this joint curriculum is offered regularly enrolled students at the Tennessee A. and I. State University who are pursuing Bachelor of Arts or Science curriculum.

The first three years of this curriculum include courses designed (1) to offer adequate training in the basic sciences and (2) to promote broad cultural development. The following courses must be successfully completed:

1. Basic Science Courses: (48 to 52 qr. hrs.)	Quarter Hours
General Biology or Zoology with Laboratory.....	12
Inorganic Chemistry (to include physical chemistry of solutions).....	12
Qualitative.....	4
Organic Chemistry with Laboratory.....	8-12
General Physics with Laboratory.....	12
	48 to 52
2. Broad Cultural Subjects: (92 to 96 qtr. hrs.)	
College Mathematics.....	9
English Composition.....	9
Electives: Chosen in the major area of concentration and in subjects designed to promote broad cultural development.....	74 to 78
Total.....	144

The fourth year of the joint curriculum is offered those students who are admitted to the Meharry School of Dentistry. At the successful completion of the freshman year curriculum in the School of Dentistry at the Meharry Medical College, the student makes application to the Tennessee A. and I. State University for the Bachelor of Arts or Science degree. Upon joint recommendation of the Meharry School of Dentistry and the Tennessee A. and I. State University, the student becomes a candidate for the Bachelor of Arts or Science degree. The degree is awarded by the Tennessee A. and I. State University.

Medical Laboratory Technology Combination Curriculum

Leading to Bachelor's Degree and Certificate

The School of Medical Technology of Hubbard Hospital, Meharry Medical College and the Tennessee A. and I. State University, Nashville, Tennessee have established a combination curriculum which leads to the Bachelor of Science degree in Medical Technology from Tennessee A. and I. State University and a Certificate in Medical Technology from Meharry Medical College. The student shall spend three academic years at Tennessee A. and I. State University fulfilling the requirements of that institution and likewise the specific requirements for admission to the School of Medical Technology. After the satisfactory completion of the two year course in Medical Technology at Meharry Medical College, Tennessee A. and I. State University will confer the Bachelor of Science degree, provided student has been admitted on the combined curriculum and meets the requirements in this combination for a degree from that college. The student should present an official statement from the Registrar of Tennessee A. and I. State University certifying registration for this curriculum at the time of application to the School of Medical Technology.

It must be clearly understood by the applicant that the satisfactory completion of three years of college work at Tennessee A. and I. State University does not imply acceptance in the School of Medical Technology at Meharry Medical College.

The recommended schedule of study for the first three years of college work at Tennessee A. and I. State University for the combination curriculum:

Freshman Year	Quarter Hours
English 101-102-103.....	9
Animal Biology 111-112-113.....	12
Chemistry 111-112-113.....	12
Social Sciences (Elective).....	3
Physical Education 11-12-13 (Women).....	3
Air Science and Physical Ed. (Men) 11-12-13.....	6
Mathematics 111-112-113.....	9

Total: (Men) 51; (Women) 48 quarter hours	
<i>Sophomore Year</i>	
Biology 241 (Bacteriology)	4
English 211-212-213	9
Chemistry 211-212-213 (Anal. Chem.)	12
Air Science and Physical Ed. (Men) 20's to 43's	6
Physical Education (Women) 20's to 43's	3
Art, Music, Philosophy (Electives)	6
Social Sciences (Electives)	12

Total: (Men) 49; (Women) 46 quarter hours	
<i>Junior Year</i>	
Biology (Elective)	4
Chemistry 361 (Survey Org.)	4
Humanities (Electives)	15
Social Sciences (Electives)	15
Physics 211, 212, 213	12

Total: (Men) and (Women) 50 quarter hours

SUMMARY OF CURRICULUM

Basic Science Courses with Laboratory	69 qr hrs
Broad Education Courses	80 qr hrs

The schedule of courses of the Medical Technology Curriculum follow.

<i>First Year</i>	<i>Quarter Hours</i>	<i>Total Hours</i>
Biochemistry	15	165
Bacteriology	15	180
Parasitology	6	72
Physiology	11	121
Clinical Pathology	9	99
Basal Metabolism	1	11
*Laboratory Practice	108	1,188

Total: Quarter Hours 165
Grand Total: First Year 1,836

<i>Second Year</i>	<i>Quarter Hours</i>	<i>Total Hours</i>
X-ray Technic	28	308
Tissue Technic Practice	9	99
Cardiology	9	99
Tissue Technic Theory	8	88
Seminar	21	231
*Laboratory Practice	72	792

Total: Quarter Hours 147
Grand Total: Second Year 1,617
Grand Total: First and Second Year 3,453

DEPARTMENT OF BIOLOGY

H. K. Wood, Ph.D., Head

The curricula of the Department of Biology are designed to fulfill the requirements in the areas of (1) preservice teacher training, (2) preprofessional training for the medical branches, (3) service courses for other departments at the University, and (4) graduate courses and research in zoology.

*Includes a balanced rotation service experience in hematology, bacteriology, serology, Chemistry, and urinalysis.

N.B.—Courses to satisfy the individual needs of practicing physicians are offered, upon request, for varying lengths of time, to students who may or may not meet the entrance requirements of the School of Medical Technology. Such students may register as auditors, receiving no academic credit for courses pursued. Fees are prorated in accordance with the number of hours taken.

Two major undergraduate curricula are offered, either of which may lead to the Bachelor of Science degree. With the aid of the departmental adviser the student should select one of the curricula, as outlined below, at the beginning of the freshman year. If the student should desire to change to the other curriculum at the end of the freshman year, sufficient flexibility in both curricula will permit this without much loss in time. Those who wish to prepare for entrance into graduate school or one of the medical branches should select the Preprofessional and Non-Teacher Training Curriculum. The Preprofessional and Non-Teacher Training Curriculum requires a minimum of 192 quarter hours for graduation, 66 of which should be of 300 and 400 level courses. The Preservice Teacher training curriculum requires a minimum of 192 quarter hours for graduation, 66 of which should be of 300 and 400 level courses. Each curriculum requires a minimum of 48 hours of prescribed courses in the major field of which at least 15 quarter hours must be in courses on the 300 and 400 levels. In addition, the student is expected to take the courses in the related areas as indicated in each curriculum. A student may qualify for the Bachelor of Arts degree by completing the equivalent of 27 quarter hours of German or French in addition to the regularly prescribed courses.

An undergraduate minor in Biology consists of a minimum of 36 quarter hours, 12 of which must be taken in sequence in Biology 101-2-3 or 111-2-3. The remaining 24 hours may be elected from the following courses: Bacteriology 241, Botany 112-3, Biology 311, Zoology 332-3, 401, 402-3, 432, 441, and 483.

CURRICULUM FOR PREPROFESSIONAL AND NON-TEACHING TRAINING

With a Major in Biology

<i>Freshman Year</i>			<i>Sophomore Year</i>		
<i>Quarter Hours Credit</i>			<i>Quarter Hours Credit</i>		
<i>Name of Course</i>	<i>I</i>	<i>II</i>	<i>Name of Course</i>	<i>I</i>	<i>II</i>
Biology 111-2-3	4	4	Bacteriology 241	4	
Mathematics 111-112-113			Botany 112-3		4
(or 161-2-3)	3	3	English 211-2-3	3	3
English 101-2-3	3	3	Physics 211-2-3	4	4
*German or French			Sociology 211-2-3 or		
101-2-3 or 201-2-3	3	3	**History 201-2-3	3	3
Chemistry 111-2-3	4	4	German or French		
Air Science (M)			201-2-3 or Electives	3	3
151-2-3	1	1	Air Science (M)		
Physical Educ.			251-2-3	1	1
11-12-13	1	1	Physical Educ.		
			21 to 49	1	1
Men	19	19	Men	19	19
Women	18	18	Women	18	18

<i>Junior Year</i>			<i>Senior Year</i>		
<i>Quarter Hours Credit</i>			<i>Quarter Hours Credit</i>		
<i>Name of Course</i>	<i>I</i>	<i>II</i>	<i>Name of Course</i>	<i>I</i>	<i>II</i>
Biology 311	4		Zoology 432		4
Zoology 332-3		4	Zoology 401 or 441 or		
Chemistry 311-2-3	4	4	483 or 402-3	4	4
Psychology 221-2		3	Biology 450	3	
Electives	5	4	Electives	8	12
Soc. 322 or Hist.	3		Zoo. 500 (Seminar)	0	0
	16	15		15	16

CURRICULUM FOR PRESERVICE TEACHER TRAINING

With a Major in Biology

Freshman Year				Sophomore Year			
		Quarter				Quarter	
Name of Course		I	II	Name of Course		I	II
Biology 111-12-13		4	4	Bact. 241		4	
Math. 111-112-113 (or 161-2-3)		3	3	Botany 112-3			4
*German or French				Eng. 211-12-13		3	3
101-2-3 or 201-2-3		3	3	Physics 211-12-13 (or 221-2-3)		4	4
Eng. 101-2-3		3	3	German or French			
Chem. 111-2-3		4	4	201-2-3		3	3
Air Science (M)				Ed. 201		3	
151-2-3		1	1	Psychology 242-3			3
P. E. 11-12-13		1	1	Air Science (M)			
				251-2-3		1	1
				P. E. 20-59		1	1
Men		19	19	Men		19	19
Women		18	18	Women		18	18

Junior Year				Senior Year			
		Quarter				Quarter	
Name of Course		I	II	Name of Course		I	II
Biology 311		4		Zoology 432			4
Zoology 332-3			4	Zoology 401 or 441 or 483 or 402-3		4	
Chem. 311-2-3		4	4	Educ. 462		3	
Psychology 312		3		Educ. 463			3
Educ. 301-71-87		3	3	Educ. 471		3	
Soc. 211-2-3 or Soc. Stud. 111-12-13 or **History				Educ. 472s			9
201-2-3		3	3	Health 151 or 211 or 212 or 213 or 301 or 302 or Nutrition 212			3 or 3
Art 151 or Music 133 or Phil. 301 or Phil. 332 (any two)			3	Soc. Stud. 114 or Pol. Sci. or Econ. or Hist.		3	
				Biology 450		3	
				Electives			6 or 9
				Zoo. 500 (Seminar)		0	0
		17	17			16	16

COURSES IN BIOLOGY

101-2-3. *Fundamentals of Biology*. (12) Studies of biological principles as illustrated by types of organisms, their activities, and life processes, with emphasis on man. These courses must be taken in sequence. Three lectures and two laboratory periods.

111-12-13. *Principles of Animal Biology*. (12) This course is designed to provide a sound understanding of structure, function and life characteristics of animals. This course should be taken in sequence. Three lectures and two laboratory periods.

311. *Principles of Genetics*. (4) An introduction to genetics, including the laws of heredity, the role of heredity in developmental physiology, and the relation between heredity and evolution. Prerequisites: Biology 101-2-3 or equivalent. Three lectures and two laboratory periods.

* A student who has two or more units of the foreign language in high school and passes the entrance proficiency test will begin the language at the level of his indicated proficiency. German is strongly recommended.

** To be pursued if the student does not show one unit on high school transcript.

411. *Advanced Genetics*. (4) The main areas considered are the nature of the gene, the principles governing genic mutation and change in chromosomal structure, and the results of the operation of these principles. Prerequisites: Biology 101-2-3, and 311. Three lectures and two laboratory periods.

441. *Microtechnique*. (4) Theory and methods of preparing tissues for microscopical examinations: fixation, embedding, cutting, staining and mounting. Prerequisites: Biology 101-2-3 and Chemistry 111-2-3 or equivalents. One lecture and three laboratory periods.

450. *Senior Project*. (0 or 3) Required of all seniors. This project, preferably experimental research, is to be carried out under a project adviser. It is to begin in the Fall quarter of the senior year and to be completed by the end of the Winter quarter with a written report according to the form prescribed by the Department. Methods in the setting up of a scientific problem, the collection and analysis of data, and the use of the literature are emphasized.

Bacteriology

241. *General Bacteriology*. (4) Consideration of identification, culture, sterilization and disinfectant procedures employed in studying certain microorganisms. Open to majors in Home Economics. Prerequisite: Biology 101 or Chemistry 111. Three lectures and two laboratory periods.

401. *Applied Bacteriology*. (4) The study of bacterial techniques in food, sanitation, soil and pathogenic bacteriology. Prerequisites: Bacteriology 241, Chemistry 361 or consent of instructor. Three lectures and two laboratory periods.

Botany

111. *Botany for Teachers*. (4) This course includes an introduction to the plant kingdom with emphasis placed on the structure and function of the seed plant. Three lectures and two laboratory periods.

112-3. *General Botany*. (8) Deals with a study of the anatomy, physiology and taxonomy of plants. Three lectures and two laboratory periods.

Zoology

202-3. *Human Physiology*. (8) The fundamentals of the structure, function and organization of the organ-systems of man. These courses must be taken in sequence. Open to majors in Home Economics and Health and Physical Education. Prerequisite: Biology 101 or Chemistry 111. Three lectures and two laboratory periods.

332-3. *Comparative Anatomy*. (8) The comparative anatomy and evolution of the organ-systems of chordate animals. These two courses must be taken in sequence. Prerequisites: Biology 101-2-3 or equivalents. Three lectures and two laboratory periods.

401. *Invertebrate Zoology*. (4) A study of the morphology, physiology, taxonomy and life histories of the invertebrates. Emphasis is placed on the systematic developments of invertebrate types. Prerequisites: Biology 101-2-3 or equivalents. Three lectures and two laboratory periods.

402-3. *Mammalian Physiology*. (8) Consideration of the dynamic interactions and integrations of mammalian organ-systems. Special emphasis is placed upon recent advances in methodology and new concepts in physiology and contributing sciences. Prerequisites: Biology 111-12-13 and Chemistry 111-12-13 or equivalent. Three lectures and two laboratory periods.

432. *Embryology*. (4) A general consideration of gametogenesis, fertilization and cleavage in animals and the early development of echinoderms, protochordates and selected vertebrates, with emphasis on early development of the chick. Prerequisites: Zoology 332-3 are strongly recommended. Three lectures and two laboratory periods.

441. *Introduction to Parasitology*. (4) A survey of the animal parasites of man and animals. Special attention is given to the parasitic protozoa, the

** To be pursued if the student does not show one unit on high school transcript.

helminths, and the arthropods. Consideration is also given to the spirochaetes, certain virus diseases the rickettsia and related organisms. May carry graduate credit for non-majors. Prerequisite: Biology 111-12-13 or equivalent. Three lectures and two laboratory periods.

483. *General Entomology*. (4) A study of the general characteristics of insects, with special emphasis on their biology, ecology and economic importance. Some attention is also given to methods of collecting and preserving insects for study and/or demonstrations. Prerequisite: Biology 111-12-13 or equivalent. Three lectures and two laboratory periods.

500. *Zoology Seminar*. (No Credit) Current Problems in Biology. Required of all seniors and graduate students in the Department. Meets weekly during each quarter of the regular school year, and summer terms.

DEPARTMENT OF CHEMISTRY

SAMUEL VON WINBUSH, Ph.D., *Chairman, Committee*

The curriculum of the Department of Chemistry is designed (1) to offer a collegiate major in Chemistry which, qualitatively and quantitatively, satisfies the criteria generally adopted by the leading colleges and universities of the United States and by the American Chemical Society, (2) to offer meaningful and satisfactory service courses to other departments in the university, and (3) to offer a graduate program of instruction and research leading to the Master of Science degree which will conform to the requirements of the Graduate School of the University.

Students who are taking a professional undergraduate major in Chemistry must begin their work in the freshman year and should take the courses shown in the program below entitled "Undergraduate Program for Professional Major." A minimum of 66 quarter hours in 300 and 400-level courses is required of majors.

Undergraduate Program for Professional Major

A professional undergraduate major consists of a minimum of 60 quarter hours of Chemistry, 36 of which must be in 300 and 400 level courses. These hours are accumulated through pursuing the following courses:

Chemistry 111-2-3 (General).....	12	Quarter Hours
Chemistry 211-2-3 (Analytical).....	12	Quarter Hours
Chemistry 311-2-3 (Organic).....	12	Quarter Hours
Chemistry 401 (Chemical Bibliography).....	3	Quarter Hours
Chemistry 481-2-3 (Physical).....	12	Quarter Hours
Chemistry 400 (Senior Project).....	3	Quarter Hours
Chemistry: Elective Advanced Course.....	6	Quarter Hours

Total Hours Chemistry.....60 Quarter Hours

In addition, the major in Chemistry includes the following related and required courses:

Mathematics 161-2-3.....	15	Quarter Hours
Mathematics 261-2-3.....	15	Quarter Hours
Physics 221-2-3.....	12	Quarter Hours
Social Science Electives.....	18	Quarter Hours
*Foreign Language (2 years).....	18	Quarter Hours
English Composition 101-2-3.....	9	Quarter Hours
English Literature 211-2-3.....	9	Quarter Hours

Total Hours Related and Required Courses.....96 Quarter Hours

* German or Russian

In the total course of study, including all courses taken, at least 45 hours must be in 300 and 400 level courses.

CURRICULUM IN CHEMISTRY FOR A PROFESSIONAL MAJOR

Freshman Year				Sophomore Year			
Quarter				Quarter			
Name of Course	I	II	III	Name of Course	I	II	III
Chemistry 111-2-3	4	4	4	Chemistry 211-2-3	4	4	4
English 101-2-3	3	3	3	Foreign Lang. II	3	3	3
Mathematics 161-2-3	5	5	5	Mathematics 261-2-3	5	5	5
Physical Education				Physical Education			
11-12-13	1	1	1	20's and 50's	1	1	1
Air Science for men... 1	1	1	1	Air Science for men ... 1	1	1	1
Foreign Lang. I	3	3	3	World Literature 211-212-213	3	3	3
Women	16	16	16	Women	16	16	16
Men	17	17	17	Men	17	17	17
Junior Year				Senior Year			
Quarter				Quarter			
Name of Course	I	II	III	Name of Course	I	II	III
Chemistry 311-2-3	4	4	4	Chemistry 481-2-3	4	4	4
Physics 221-2-3	4	4	4	Chemistry 401	3		
Electives (Unrestricted) ..	6	6	6	Chemistry Elective ...		3	3
Social Science Elective... 3	3	3	3	Chemistry 400			
				(Senior Project)		3	
				Social Science Elective... 3		3	3
				Elective (Unrestricted) ..	6	3	6
				Chemistry 492	0	0	0
	17	17	17		16	16	16

Students who wish to take a major in Chemistry and to obtain a Tennessee Teachers Provisional Certificate should take the courses shown below in the program entitled "Undergraduate Program for Non-Professional Major for Prospective Teachers":

COURSES IN CHEMISTRY

Undergraduate

111-2. *General Chemistry*. (8) This course is an elementary study of the fundamental laws and theories of chemistry and of the descriptive chemistry of important elements and compounds. Required of majors in chemistry, biology, engineering, pre-medicine, pre-dentistry, home economics, agriculture, health and pre-nursing. Two lectures, one recitation, and two two-hour laboratory periods per week.

113. *Qualitative Analysis*. (Inorganic). (4) Chemistry 111-2 are prerequisites. A study of the principles underlying ionic equilibria in solutions and a laboratory study of the separation and identification of the common cations and anions. Two lectures and two three-hour laboratory periods per week.

113-E. *General Chemistry* (For Engineers Only). (4) A study of the principles underlying ionic equilibria in solutions and an introduction to elementary organic chemistry.

211-2-3. *Elementary Analytical Chemistry*. (12) Chemistry 111-2-3 and Mathematics 161-2-3 are prerequisites. This course includes the theories and laboratory practice in both qualitative and quantitative analysis. The quantitative analysis includes both volumetric and gravimetric analysis, together with related stoichiometric problems. Three lectures and two three-hour laboratory periods per week.

311-2-3. *Organic Chemistry*. (12) Chemistry 111-2-3 are prerequisites. A systematic study of the source, physical properties, and chemical behavior of

aliphatic, aromatic, and heterocyclic compounds of carbon. Three lectures and two three-hour laboratory periods.

361. *Organic Chemistry Survey*. (4) Chemistry 111-2-3 are prerequisites. Important classes of organic compounds are presented. Emphasis is placed upon the study of hydrocarbons and their principal derivatives, carbohydrates, proteins, fats and oils, vitamins, and dyes. Designed for majors in agriculture, home economics, and health. Three lectures and two two-hour laboratory periods.

400. *Senior Project*. (3) Experimentation and writing. This course is required of prospective graduating seniors. Students should enroll in this course at least two quarters prior to expected date of graduation. Other regulations pertaining to this subject found elsewhere in this catalog, should be observed. Minimum of eight hours per week.

401. *Chemical Bibliography*. (3) Prerequisites: Chemistry 211-2-3 and 311-2-3, and a reading knowledge of German or Russian. A study of how to use the chemical journals, reference books, and other sources of chemical information. A systematic search in the chemical literature for information on several compounds and topics will be included. Two conferences a week.

*422-3. *Analytical Chemistry*. (6) Chemistry 211-2-3, 311-2-3, 481 and Physics 221-2-3 are prerequisites. Instrumental methods of analysis. Open to senior chemistry majors and graduate students. This course trains students in the theory and practice of instrumental methods as applied to quantitative analysis. Potentiometric and conductometric titrations, measurement of pH, and analyses using refractometers, colorimeters, spectrophotometers, polarimeters, and Geiger Counters will be performed. Two lectures and two three-hour laboratory periods each week.

**440. *Fundamentals of Chemistry (Summer Only)*. (4) The fundamentals and modern concepts of inorganic and organic chemistry are discussed. Physical and chemical properties of elements and compounds are considered from a point of view of atomic and molecular structure. Five lectures and two two-hour laboratory periods.

**441. *Elementary Analytical Chemistry (Summer Only)*. (4) This course consists of the fundamental principles of volumetric and gravimetric analysis, stoichiometry, and appropriate individual laboratory work. Some inorganic qualitative analysis will be included. Five lectures and two three-hour laboratory periods.

**451-2-3. *Modern Chemistry*. (12) This three-quarter course is designed to survey the field of chemistry. Emphasis is placed upon atomic and molecular structure and principles relating to physical and chemical change. Modern concepts concerning radioactivity, nuclear reactions, and acid-base relationships are analyzed. An extensive survey of modern theories relating atomic and molecular structure in organic compounds concludes the course.

**462-3. *Organic Qualitative Analysis*. (6) Chemistry 211-2-3, 311-2-3, and 404 are prerequisites. A systematic study of the solubility and class reactions of the principal classes of organic compounds. It includes also identification of pure organic compounds and mixtures. Two lectures and two three-hour laboratory periods.

481-2-3. *Physical Chemistry*. (12) Prerequisites: Chemistry 111-2-3 and 211-2-3, Mathematics 261-2-3, and Physics 221-2-3; or permission of instructor. Physics 221-2-3, and Chemistry 481-2-3 may be taken concurrently. This course is devoted to a study of the fundamental theories and laws governing both physical and chemical changes and covers the properties of gases, liquids, solids, thermodynamics, solutions, chemical equilibria, reaction rates, and electrochemistry. Three lectures and two three-hour laboratory periods.

492. *Chemistry Seminar*. (0) Required of all Seniors.

**For Science Education Majors only.

*Approved for graduate credit.

DEPARTMENT OF ENGLISH

CRAWFORD B. LINDSAY, Ph.D., Head

The program of the Department of English is so arranged as to serve the needs of all the students of the University, as well as to give a thorough foundation to those who desire to become teachers or specialists in the field. The Department also gives assistance to those who look forward to careers in the field of journalism.

Work leading to the Bachelor of Science degree, as well as to the Bachelor of Arts degree, may be pursued in the Department of English. All students working for an undergraduate degree in English must complete at least 12 quarter hours in either biology, chemistry, or natural science and at least 9 quarter hours in mathematics (Mathematics 111-112-113 or Mathematics 131-132-133), in addition to the other requirements. Candidates for the Bachelor of Arts degree must meet the requirements of the University in foreign languages, which requirements are stated elsewhere. (For a person who has had no foreign language in high school, the foreign language requirement is 27 quarter hours of work in one language for the Bachelor of Arts degree). Candidates for the Bachelor of Science degree may satisfy the requirement in foreign languages by completing only 9 quarter hours of work in one language, regardless of whether or not they had had foreign language in high school. All other requirements for the Bachelor of Science degree and the Bachelor of Arts degree in English are the same.

Each undergraduate must complete a minimum of 192 quarter hours of work for a bachelor's degree. At least 66 of the quarter hours in all subjects must be in courses on the 300 and 400 level. At least 45 quarter hours of work in English must be completed above the 9 quarter hours of work in Freshman English. For a major, thirty-six of the required hours in English must be on the 300 and 400 level. This 45 quarter hour program in English does not include the 3 quarter hour course in English 471 (Methods of Teaching English), which carries certification credit in secondary education, although it is administered by the Department of English.

One desiring certification in English as a second teaching area must complete 45 quarter hours of work in English, including Freshman English, but excluding Methods of Teaching English.

One desiring a minor in English, or certification in English as a second teaching area, must complete 36 quarter hours of work in English, including Freshman English, but excluding Methods of Teaching English.

Majors in English are required to complete the following courses: English 101-102-103 (Freshman English); English 211-212-213 (World Literature); English

222-223 (English Literature); English 361362-363 (American Literature); and English 451 (English Language). Beginning in September, 1954, all English majors must elect a course in composition above the freshman level before graduation. In addition to the courses listed above, all English majors working toward certification must complete 36 quarter hours of approved work in professional education and, also, the following courses: Art 133 (Man and Materials); Music 131 (Music Appreciation); Social Studies 111-112-113-114; or three courses of one other social science and one course of another social science and three courses of mathematics, either 111-112-113 or 131-132-133 or 161-162-163; and 9 quarter hours of work in Health, Personal Development, and Home and Family Living.

Majors in English are required to complete Speech 201-202-203 for a total of 9 quarter hours, also.

BACHELOR OF SCIENCE CURRICULUM IN ENGLISH

Freshman Year				Sophomore Year			
Name of Course	Quarter			Name of Course	Quarter		
	I	II	III		I	II	III
English 101-2-3	3	3	3	English 211-12-13	3	3	3
Foreign Language	3	3	3	English 222-23		3	3
Social Science	3	3	3	Music 131	3		
Mathematics	3	3	3	Biology 101-2-3			
Health 211-12	3	3		or			
Art 133			3	Chemistry 111-12-13			
P. E.	1	1	1	or			
AFROTC (M)	1	1	1	Natural Science			
				121-22-23	4	4	4
				Education 201	3		
				Psychology 242		3	
				Social Science			3
				P. E.	1	1	1
				AFROTC (M)	1	1	1
				History 201-2-3	3	3	3

Women	16	16	16
Men	17	17	17

Women	17	17	17
Men	18	18	18

Junior Year				Senior Year			
Name of Course	Quarter			Name of Course	Quarter		
	I	II	III		I	II	III
English 361-2-3	3	3	3	English 411-12; 393	3	3	3
Education 301	3			or			
Psych. 243	3			English 421-22-23			
Psych. 312		3		Psych. 463	3		
English 323			3	English 451-471-450	3	3	3
English 311-12-13				Educ. 387		3	
or				Educ. 371	3		
English 331-2-3	3	3	3	Educ. 462	3		
Electives	3	6	6	Educ. 472			9
Speech 201-2-3	3	3	3	Electives	3	9	9
	18	18	18		18	18	15

BACHELOR OF ARTS CURRICULUM IN ENGLISH

Freshman Year				Sophomore Year			
Name of Course	Quarter			Name of Course	Quarter		
	I	II	III		I	II	III
English 101-2-3	3	3	3	English 211-12-13	3	3	3
Foreign Language	3	3	3	English 222-23		3	3
Social Science	3	3	3	Music 131	3		
Mathematics	3	3	3	Biology 101-2-3			
Health 211-12	3	3		or			
Art 133			3	Chemistry 11-12-13			
P. E.	1	1	1	or			
AFROTC (M)	1	1	1	Natural Science			
				121-22-23	4	4	4
				Educ. 201	3		
				Psych. 242		3	
				Social Science			3
				P. E.	1	1	1
				Foreign Language	3	3	3
				AFROTC (M)	1	1	1

Women	16	16	16
Men	17	17	17

Women	17	17	17
Men	18	18	18

Junior Year				Senior Year			
Name of Course	Quarter			Name of Course	Quarter		
	I	II	III		I	II	III
English 361-2-3	3	3	3	English 411-12; 393	3	3	3
Foreign Language	3	3	3	or			
Educ. 301	3			English 421-22-23			
Psych. 312		3		English 451-471-450	3	3	3
English 323			3	Psych. 463		3	
English 311-12-13				Educ. 387		3	
or				Educ. 371	3		
English 331-2-3	3	3	3	Educ. 462	3		
Psych. 243	3			Educ. 472			9
Electives	3	6	6	Hist. 201 or 202 or			
				203		3	
				Electives	6	3	
	18	18	18		18	18	15

COURSES IN ENGLISH

Undergraduate

100. *English Fundamentals*. A non-credit course designed for students who give evidence by entrance examination of their inability to meet the standards of English 101.

101-102-103. *Freshman English*. (9) A course concerned with the development of various areas of the communication skills—reading, writing, speaking, and listening. Required of all freshmen in numerical sequence.

211-212-213. *World Literature*. (9) A course embracing the study of the principal works, by types, of world literature from the ancients to the contemporary American, British, French, German, Spanish, and Italian writers. Special attention given to religious and philosophical theories in these writings and their applications to modern life and thought.

222-223. *Survey of English Literature*. (6) Lectures, reports, readings, and classroom discussion of major English works from the Anglo-Saxon Period to the Twentieth Century. (Three courses were offered as English 202-203 during 1950-51, as English 201-202 prior to September, 1949, and as English 212-213 during 1950-51.) Philosophical and religious implications in these selections given consideration as they contribute to the prospective English teacher and the life of the community in which he resides.

261-262. *Children's Literature*. (6) (Offered also as Education.) Offers prospective teachers of the primary grades an opportunity to become familiar with the field of literature suited to the tastes of children. Principles that underlie selection of children's literature considered.

272. *Advanced Composition*. (3) Open to students beyond the freshman year who desire additional training in written communication.

301-302-303. *Elementary Journalism*. (9) A practical course in English composition, with emphasis upon the construction and function of daily and weekly newspapers, community publicity, school publications, and news stories.

*311. *Literature of the Romantic Movement*. (3) Study of representative British selections from 1798 to 1832. Attention given to both poetry and prose.

312. *The Victorian Era*. (3) Study of selections from the chief representative of the Victorian period in Great Britain, with emphasis upon the relation of the literature to the time in which it was written.

321-322. *Business English*. (6) A course in business correspondence and advertising. English 272 or 321 a pre-requisite for English 322.

323. *Expository Writing*. (3) Training in preparation of the research report and other types of expository writing, with emphasis on the collection of material, analysis, organization, and arrangement.

*331. *Literature of the Sixteenth Century*. (3) Study of representative British selections from 1500 to 1600. A consideration of the non-dramatic literature of the century; Lyly, Peele, Greene, Linacre, More, Colet, and others. The poetic types included. Philosophical and religious phases in the lives and works of the authors so concerned stressed in relation to the future teacher of English and his clientele.

*332. *Literature of the Seventeenth Century*. (3) Study of representative British selections from 1600 to 1700. The poetry and prose of the period in relation to streams of thought of the century as revealed in the writings of the metaphysical, cavalier, puritan, and restoration authors.

*333. *Literature of the Eighteenth Century*. (3) Study of representative British selections from the ages of Pope (1700-1744) and Johnson (1744-1788.)

*361-362-363. *Survey of American Literature*. (9) American Literature from Colonial times to the Civil War; American Literature from the Civil War till 1900; American Literature of the twentieth century. Required of all majors in the Junior year.

*393. *Literature of Negro Life*. (3) A study of American literature dealing primarily with Negro life.

*401. *The Metaphysicals*. (3) A study of the works of John Donne, George Herbert, Richard Crenshaw, Henry Vaughn and other followers of the Donnesque school. Special attention given to religious doctrines and philosophies advanced by these writers, and their implications to future teachers of English and their communities.

*411. *Shakespeare*. (3) Study of the principal plays of Shakespeare.

*412. *Shakespeare*. (3) A continuation of the study of Shakespeare, with emphasis upon the cultural background of the Elizabethan Period.

*421. *The English Novel*. (3) A study of selected English novels, with attention to the social background in which they were written.

*422. *The American Novel*. (3) A study of selected American novels, with attention to the social background in which they were written.

*423. *The Continental Novel*. (3) A study of selected Continental novels with attention to the social background in which they were written.

*431. *Milton and Bunyan*. (3) Study of Milton's *Paradise Lost*, *Samson Agonistes*, *Paradise Regained*, the minor poems, and the more important prose tracts; and of Bunyan's *Pilgrim's Progress*. The philosophy and religion in the works of Milton and Bunyan will be carefully treated to gain maximum perspective in the thinking of the prospective teacher of English.

450. *Senior Project*. (3)

*451. *History of the English Language*. (3) A study of the development of the English language from the beginnings to modern times. Some attention is given to phonetics and to the elementary principles of linguistics. Required of all English majors. Pre-requisite: Eighteen hours of English.

*453. *Current English*. (3) Advanced grammar and modern usage. Some attention is given to semantics. Pre-requisite: Eighteen hours of English.

471. *Methods of Teaching High School English*. (3) (Offered as Education.) A methods course in secondary school English. Required of majors. Pre-requisite: Thirty-six hours of English must be taken during residence at this University.

DEPARTMENT OF MODERN FOREIGN LANGUAGES

ALMA T. WATKINS, Ph.D., Head

The Department of Modern Foreign Languages offers the Bachelor of Arts degree. A minimum of 192 quarter hours with an average grade of "C" or above is required for graduation.

Students who elect a major in romance languages, French and Spanish, shall

*Approved for graduate credit.

present twenty-seven quarter hours of course work in one romance language and not less than eighteen quarter hours in an additional romance language; these courses to be based upon two or more units of high school credit in the major language elected. Otherwise the student shall offer thirty-six quarter hours in one romance language with not less than twenty-seven quarter hours in courses numbered above 300, and twenty-seven quarter hours in an additional language with not less than eighteen quarter hours in courses numbered above 300. The twenty-seven quarter hours must include nine quarter hours of literature from the 300 series, three quarter hours of French or Spanish phonetics, six quarter hours of advanced oral and written French or Spanish composition, and nine additional quarter hours from the 400 series. The eighteen quarter hours elected from the additional language must include nine quarter hours of literature from the 300 series, three quarter hours of phonetics (course number 421), and six quarter hours of advanced oral and written composition (courses number 422 and 423). Courses will be chosen by the student in consultation with his adviser. Students who anticipate obtaining the Master of Arts degree in the department must pursue this curriculum.

Students who elect a minor in romance languages must present eighteen quarter hours of course work including nine quarter hours of literature in the 300 series, three quarter hours of phonetics (course number 421), and six quarter hours of advanced oral and written composition (courses number 422 and 423) in the two languages elected.

Students who elect a major in French shall present thirty-six quarter hours based upon two or more units of high school credit; otherwise forty-five quarter hours will be required with not less than twenty-seven quarter hours in courses numbered above 300. These courses must include nine quarter hours of literature in the 300 series, three quarter hours in phonetics (French 421), six quarter hours in advanced oral and written composition (French 422 and 423), and nine additional quarter hours in courses in the 400 series. Courses will be chosen by the student in consultation with his adviser.

A student who elects a minor in French must present eighteen quarter hours of course work, including nine quarter hours of literature from courses in the 300 series, three quarter hours of phonetics (French 421), and six quarter hours in advanced oral and written composition (French 422 and 423).

Students who elect a major in Spanish shall present thirty-six quarter hours based upon two or more units of high school credit; otherwise forty-five quarter hours will be required with not less than twenty-seven quarter hours in courses numbered above 300. These courses must include nine quarter hours of literature in the 300 series, three quarter hours in phonetics (Spanish 421), six quarter hours in advanced oral and written composition (Spanish 422 and 423), and nine additional quarter hours in courses in the 400 series. Courses will be chosen by the student in consultation with his adviser.

A student who elects a minor in Spanish must present eighteen quarter hours of work, including nine quarter hours of literature from courses in the 300 series, three quarter hours of phonetics (Spanish 421), and six quarter hours in advanced oral and written composition (Spanish 422 and 423).

All majors in the department are required to write a senior project.

Students who enter with advanced credits must take the proficiency examination in the language elected for proper placement.

REQUIREMENTS FOR CERTIFICATION OF TEACHERS OF FOREIGN LANGUAGES

The requirements listed here for certification of teachers of foreign languages became effective in September, 1953. Methods-Modern Foreign Languages (Educ. 471) is required of all students who wish to be certified as teachers of foreign languages.

CURRICULUM IN ROMANCE LANGUAGES

Freshman Year				Sophomore Year			
Quarter				Quarter			
Name of Course	I	II	III	Name of Course	I	II	III
French or Spanish 101-2-3	3	3	3	French or Spanish 201-2-3	3	3	3
English 101-2-3	3	3	3	English 211-212-213	3	3	3
Biology 101-2-3 or Chemistry 111-2-3 or Physics 211-2-3 or Natural Science 121-2-3	4	4	4	Minor	3	3	3
Social Studies 111-2-3 or Sociology 211-2-3 or History 121-2-3	3	3	3	Social Studies 114	3		
Health 211 or 212 or Nutrition 212	3			Psychology 242-43		3	3
Music 131		3		Math. 200 or Math. 111-2-3	3	3	3
Education 201			3	Physical Ed. 20's to 50's	1	1	1
Physical Ed. 111-12-13	1	1	1	Air Science II (M)	1	1	1
Air Science I (M)	1	1	1				
Women	17	17	17	Women	16	16	16
Men	18	18	18	Men	17	17	17
Junior Year				Senior Year			
Quarter				Quarter			
Name of Course	I	II	III	Name of Course	I	II	III
French or Spanish 311-2-3	3	3	3	French or Spanish 441-2-3	3	3	3
Minor	3	3	3	Methods—Modern Foreign Language (Ed. 471)	3		
Education 301	3			Minor	3	3	3
French or Spanish 421-2-3	3	3	3	Psychology 463			3
Electives or History 201-2-3	3	3	3	Major or Electives	9		9
Psychology 312	3			Education 472		9	
Education 387		3		Senior Project 450		0	
Philosophy 323			3				
Education 462		3					
	18	18	15		18	15	18

CURRICULUM IN FRENCH

Freshman Year				Sophomore Year			
Quarter				Quarter			
Name of Course	I	II	III	Name of Course	I	II	III
French 101-2-3	3	3	3	French 201-2-3	3	3	3
English 101-2-3	3	3	3	English 211-212-213	3	3	3
Biology 101-2-3 or Chemistry 111-2-3 or Physics 211-2-3 or Natural Science 121-2-3	4	4	4	Minor	3	3	3
Social Studies 111-2-3 or Sociology 211-2-3 or History 121-2-3	3	3	3	Social Studies 114	3		
Health 211 or 212 or Nutrition 212	3			Psychology 242-43		3	3
Music 131		3		Math. 200 or Math. 111-2-3	3	3	3
Education 201			3	Physical Ed. 20's to 50's	1	1	1
Physical Ed. 11-12-13	1	1	1	Air Science II (M)	1	1	1
Air Science I (M)	1	1	1				
Women	17	17	17	Women	16	16	16
Men	18	18	18	Men	17	17	17
Junior Year				Senior Year			
Quarter				Quarter			
Name of Course	I	II	III	Name of Course	I	II	III
French 311-2-3	3	3	3	French 441-2-3	3	3	3
Minor	3	3	3	Methods—Modern Foreign Language (Ed. 471)	3		
Education 301	3			Minor	3	3	3
French 421-2-3	3	3	3	Psychology 463			3
Electives or History 201-2-3	3	3	3	Major or Electives	9		9
Psychology 312	3			Education 472		9	
Education 387		3		Senior Project 450		0	
Philosophy 323			3				
Education 462		3					
	18	18	15		18	15	18

CURRICULUM IN SPANISH

Freshman Year				Sophomore Year			
Quarter				Quarter			
Name of Course	I	II	III	Name of Course	I	II	III
Spanish 101-2-3	3	3	3	Spanish 201-2-3	3	3	3
English 101-2-3	3	3	3	English 211-212-213	3	3	3
Biology 101-2-3 or Chemistry 111-2-3 or Physics 211-2-3 or Natural Science 121-2-3	4	4	4	Minor	3	3	3
Social Studies 111-2-3 or Sociology 211-2-3 or History 121-213	3	3	3	Social Studies 114	3		
Health 211 or 212 or Nutrition 212	3			Psychology 242-243		3	3
Music 131		3		Math. 200 or Math. 111-2-3	3	3	3
Education 201			3	Physical Ed. 20's to 50's	1	1	1
Physical Ed. 11-12-13	1	1	1	Air Science II (M)	1	1	1
Air Science I (M)	1	1	1				
Women	17	17	17	Women	16	16	16
Men	18	18	18	Men	17	17	17

Junior Year				Senior Year			
Quarter				Quarter			
Name of Course	I	II	III	Name of Course	I	II	III
Spanish 311-2-3	3	3	3	Spanish 441-2-3	3	3	3
Minor	3	3	3	Methods—Modern Foreign Language (Ed. 471)	3		
Education 301	3			Minor	3	3	3
Spanish 421-2-3	3	3	3	Psychology 463			3
Electives or History 201-2-3	3	3	3	Major or Electives	9		9
Psychology 312	3			Education 472		9	
Education 387		3		Senior Project 450		0	
Philosophy 323			3				
Education 462		3					
	18	18	15		18	15	18

COURSES IN GERMAN

101-2-3. *Elementary German*. (9) Aims to develop the ability to write, read and understand simple German. A functional vocabulary is built up, and the essentials of grammar are stressed. Supplemented with graded reading.

201-2-3. *Intermediate German*. (9) Consists of intensive and extensive reading of graded German works (literary and scientific) Fluency and accuracy of comprehension are the primary objectives.

311-2-3. *Introduction to German Literature*. (9) Consists of selected readings to give the student an acquaintance with outstanding writers, ideas and movements in German literature from the beginning of the German language and literature to the contemporary period.

COURSES IN FRENCH

(Undergraduate)

101-2-3. *Elementary French*. (9) A course for beginners which consists of pronunciation, grammar and graded reading.

201-2-3. *Intermediate French*. (9) A continuation of French 101-2-3 consisting of a systematic review of grammar, dictation, conversation, and reading. Stress is placed on ability to read and easy conversation.

311-2-3. *Aspects of French Literature*. (9) An introductory course based on readings selected to give the students an acquaintance with some of the more important personalities, movements, and ideas of French literature with emphasis placed on the 17th, 18th, and 19th Centuries.

381-2-3. *Survey of French Literature*. (9) This course begins with the Middle Ages and emphasizes the works of the best authors to the present.

411-12. *The Classical Age of French Literature*. (6) Stresses the origins and foundations of French Classicism and its main representatives. Offered in alternate years.

413. *Main Ideas of the Eighteenth Century*. (3) Emphasizes the theories and philosophy of the works of the best authors of the century.

421. *Phonetics*. (3) Consists of an analysis of the sounds of French and of the operation of phonetic laws in the development of the French language.

422-3. *Advanced Grammar, Oral and Written Composition*. (6) A grammatical analysis of selected prose works; and oral and written composition. Required of those wishing to be certified as teachers of French.

441-2-3. *French Civilization*. (9) A course in the history of French civilization and culture, the arts, sciences, and institutions of France to the present.

451-2-3. *Modern French Literature*. (9) Stresses the nineteenth century in the novel, drama and poetry. The following aspects of French literature form the contents of the course: Romanticism, Realism, the Parnassian reaction in poetry, Naturalism and Symbolism. Offered in alternate years.

471-2-3. *French Literature of the Twentieth Century*. (9) Alternates with French 451-2-3. Consists of critical studies in the works of leading figures in

the novel, drama, and poetry and stresses the philosophy and theories of selected contemporary writers.

471. *Education. Methods of Teaching Foreign Languages*. (3) A basic course in modern language teaching. It acquaints the student with the recent developments in methods, materials and texts. Required of those wishing to be certified as teachers of modern foreign languages.

COURSES IN SPANISH

(Undergraduate)

101-2-3. *Elementary Spanish*. (9) A course for beginners which consists of pronunciation, grammar, and graded reading.

201-2-3. *Intermediate Spanish*. (9) A continuation of Spanish 101-2-3 consisting of a systematic review of grammar, dictation, conversation and reading. Stress is placed on ability to read and easy conversation.

311-2-3. *Aspects of Spanish Literature*. (9) An introductory course based on readings selected to give the students an acquaintance with some of the more important personalities, movements, and ideas of Spanish Literature with emphasis placed on the 17th, 18th, and 19th Centuries.

321-2-3. *Spanish American Literature*. (9) Consists of selected readings to give the student an acquaintance with the important ideas, personalities, and types of literature of the Colonial Period, the Gaucho Literature and Modernism. Offered in alternate years.

381-2-3. *Survey of Spanish Literature*. (9) Begins with the Cid and emphasizes the works of the best authors to the present. Offered in alternate years.

411-2-3. *Spanish Prose and Poetry of the Golden Age*. (9) Consists of a study of the Picaresque Novel, Cervantes and the Comedia. Offered in alternate years.

421. *Phonetics*. (3) Consists of an analysis of the sounds of Spanish and of the operation of phonetic laws in the development of the Spanish language.

422-3. *Advanced Grammar, Oral and Written Composition*. (6) A grammatical analysis of selected prose works; oral and written composition. Required of those wishing to be certified as teachers of Spanish.

COURSES IN SPANISH

441-2-3. *Spanish and Spanish American Civilization*. (9) The history of Spanish and Spanish American civilization, culture, and institutions.

451-2-3. *Modern Spanish Literature*. (9) Survey of the 19th Century Novel, Drama and Poetry stressing the following aspects: Romanticism, Realism, Regionalism and Modernism. Offered in alternate years.

471. *Education. Methods of Teaching Foreign Languages*. (3) A basic course in Modern Language teaching. It acquaints the students with the recent developments in methods, materials and texts. Required of those wishing to be certified as teachers of modern foreign languages.

DEPARTMENT OF PHYSICS AND MATHEMATICS

RUTHERFORD H. ADKINS, Ph.D., *Head*

The Department of Physics and Mathematics offers programs leading to the degrees of Bachelor of Science and Bachelor of Arts with a major in Physics or Mathematics.

Candidates for degrees must complete a minimum of 195 quarter hours of prescribed and elective course work.

The courses in physics and mathematics are designed to serve (1) those who wish to major or minor in physics or mathematics; (2) those who require physics and/or mathematics as a part of their pre-professional training; (3) those majoring in areas other than physics or mathematics to whom the knowledge and techniques of physics and/or mathematics are desirable adjuncts.

Candidates for degrees with majors in physics or mathematics must have a minimum grade of "C" in each required course in the major field, and a mini-

minimum average of "C" for all courses in the major field. Electives in the major field must be selected from courses at the 300- and/or 400- level.

All courses offered for major or minor credit in physics or mathematics must be approved by the Department of Physics and Mathematics.

CURRICULUM IN PHYSICS

Majors in physics are required to complete a minimum of 48 (45 for teacher certification) quarter hours of course work in physics, with a minimum of 36 (33 for teacher certification) quarter hours selected from physics courses numbered 300 and above. Minors in physics must complete a minimum of 30 quarter hours of course work in physics with a minimum of 18 quarter hours selected from physics courses numbered 300 and above.

BACHELOR OF ARTS OR BACHELOR OF SCIENCE PROGRAM

Freshman Year				Sophomore Year			
Quarter				Quarter			
Name of Course	I	II	III	Name of Course	I	II	III
English 101-2-3	3	3	3	Physics 221-2-3	4	4	4
Mathematics 161-2-3	5	5	5	Mathematics 261-2-3	5	5	5
Physical Ed. 11-12-13	1	1	1	German or French	3	3	3
Health 151	3			Physical Ed. 20's to 50's	1	1	1
Music 131		3		Chemistry 111-2-3	4	4	4
Art 133			3	Air Science (251-2-3) (Men)	1	1	1
Soc. Science	3	3	3				
Air Science 151-2-3 (Men)	1	1	1				
Men	16	16	16	Men	18	18	18
Women	15	15	15	Women	17	17	17

Junior Year				Senior Year			
Quarter				Quarter			
Name of Course	I	II	III	Name of Course	I	II	III
Physics 311-2-3	3	3	3	Physics 412-3	3	3	
Physics 321-2-3	3	3	3	Physics 414			3
English 211-2-3	3	3	3	Social Science			3
Physics 331-2-3	2	2	2	Physics 450	3		
Math 462-3; 421	3	3	3	*Electives	9-10	15-16	9-10
French or German	3	3	3				
Men	17	17	17				
Women	15	15	15				

BACHELOR OF SCIENCE PROGRAM (Teacher Certification)

Freshman Year				Sophomore Year			
Quarter				Quarter			
Name of Course	I	II	III	Name of Course	I	II	III
English 101-2-3	3	3	3	Mathematics 261-2-3	5	5	5
Mathematics 161-2-3	5	5	5	Physics 221-2-3	4	4	4
Health 151	3			Education 201	3		
Music 131		3		Psychology 242-3		3	3
Art 133			3	Chemistry 111-2-3	4	4	4
Social Science				Physical Ed. 20 to 50	1	1	1
Sequence	3	3	3	Air Science (Men)	1	1	1
Physical Ed. 11-2-3	1	1	1				
Air Science (Men)	1	1	1				
Men	16	16	16	Men	18	18	18
Women	15	15	15	Women	17	17	17

Junior Year				Senior Year			
Quarter				Quarter			
Name of Course	I	II	III	Name of Course	I	II	III
English 211-2-3	3	3	3	Physics 321-2	3	3	
Physics 311-2-3	3	3	3	Education 462	3		
Mathematics 462-3	3	3		Psychology 463		3	
Philosophy 323			3	Education 472			9
Health 212	3			Physics 331-2-3	2	2	2
Psychology 312		3		Physics 412-3; 414	3	3	3
Science 471			3	Physics 450	3		
Education 301, 371, 387	3	3	3	Social Science		3	
German or French	3	3	3	*Elective		3	
	18	18	18		14	17	14

COURSES IN PHYSICS

211-2-3. *College Physics*. (12) Mechanics; Heat, Sound, and Light; Electricity and Magnetism, and Modern Physics. A course in which the basic principles are presented. Required in biological and pre-medical curricula. Prerequisite: Mathematics 131-2-3. Three lectures and one laboratory period per week.

221-2-3. *General Physics*. (12) Mechanics; Heat, Sound, and Light; Electricity and Magnetism, and Modern Physics. This course is intended for engineering students and students majoring in the physical sciences. Prerequisite: Mathematics 161-2-3. Three lectures and one laboratory period per week.

311-2-3. *Electricity and Magnetism*. (9) This course presents the fundamentals of theoretical electricity and magnetism. Considerable emphasis is placed upon the solution of problems. Prerequisites: Math 261-2-3, Physics 221-2-3 or Physics 211-2-3. Three lectures per week.

314. *Optics*. (4) A brief review of geometrical optics and a study of physical optics including spectroscopy. Prerequisite: Physics 211-2-3 or Physics 221-2-3; Mathematics 263. Three lectures and one laboratory period per week.

321-2-3. *Mechanics*. (9) Statics and dynamics of particles and rigid bodies. Lagrange's and Hamilton's equations; fluid statics, and vibrations. Prerequisite: Physics 211-2-3 or Physics 221-2-3; Mathematics 261-2-3. Three lectures per week.

324. *Heat and Thermodynamics*. (3) This course presents the fundamentals of heat and provides an introduction to thermodynamics with applications to chemistry. Prerequisites: Physics 211-2-3 or Physics 221-2-3; Mathematics 261-2-3. Three lectures per week.

331-2-3. *Electrical Measurements*. (6) In this course the theory of electrical circuits is studied and discussed. The laboratory work is intended to give experience and facility in the handling of electrical measuring instruments. A comprehensive list of experiments is required, covering modern methods of measuring current, resistance, electromotive force and power, and the calibration of instruments employed, together with measurements of capacity, inductance, and ferro-magnetism. Prerequisites: Physics 221-2-3 or Physics 211-2-3; Mathematics 261-2-3. Two laboratory periods per week.

341-2-3. *Advanced Laboratory*. (6) This course is designed to permit the student to develop a variety of laboratory skills and techniques by performing experiments of an advanced nature selected from the areas of: Mechanics, Heat, Sound, Light and Modern Physics. Prerequisites: Physics 221-2-3; Mathematics 261-2-3. Two laboratory periods per week.

412-3. *Atomic and Molecular Structure*. (6) The classical and modern concepts of the atom and radiation are developed; introduction to molecular structure and the chemical bond. Prerequisites: Physics 221-2-3 or Physics 211-2-3; Mathematics 261-2-3. Three lectures.

*All electives must be approved by the Department of Physics and Mathematics.

414. *Radioactivity and Nuclear Physics.* (3) An extensive survey of the phenomena and methods of nuclear physics; fission; isotopic tracers; medical radiology; cosmic rays. Prerequisites: Physics 221-2-3 or Physics 211-2-3; Mathematics 261-2-3. Three lectures.

450. *Senior Project.* (3)

CURRICULUM IN MATHEMATICS

CALVIN E. KING, Ph.D., Coordinator

Majors in mathematics are required to complete a minimum of 60 quarter hours of course work in mathematics, with a minimum of 30 quarter hours selected from mathematics courses numbered 300 and above. Minors in mathematics must complete a minimum of 36 quarter hours of course work in mathematics with a minimum of 15 quarter hours selected from mathematics courses numbered 300 and above.

COURSES IN MATHEMATICS

100. *Fundamentals of Arithmetic and Algebra.* (0) A non-credit course designed especially for students who desire to pursue courses offered by the department but whose score on the Placement Test indicates probable failure in the regular courses. Students wishing to enroll in Mathematics 161, Mathematics 131 or Mathematics 111 must first pass the Placement Test given during Freshman Week or pass this course. Five lectures per week.

103. *Mathematics.* (3) Arithmetic for Teachers. Designed specifically for elementary education majors. The course is built around the following unifying concepts: Number, operation and measurement and approximation. The course will examine the structure as well as the concepts of arithmetic.

111-12. *Mathematics.* (6) Introduction to College Mathematics. Designed for those college students preparing to pursue careers in non scientific or engineering fields. The achievement of functional competence in the elementary mathematical concepts and operations is the major objective of the course. The concepts of number, measurement, function and proof are the mathematical media through which this achievement is sought. Prerequisite: Passing placement test or Mathematics 100. Three lectures.

113. *Mathematics.* (3) Introduction to College Mathematics. A continuation of Mathematics 112 in which applications of mathematics to a particular discipline will be considered where feasible. Prerequisite: Mathematics 112.

161-162. *Mathematics.* (10) College Algebra and Plane Trigonometry. An integrated course in algebra and trigonometry intended for the mathematics, science and engineering major. The basic ideas of the course will be presented in relation to the fundamental concepts of number, operation, function and relation, measurement and approximation and proof. Prerequisite: Passing of the placement test or Mathematics 100.

163. *Analytic Geometry.* (5) Properties of the straight line, the conic sections in the plane, transformation of coordinates, polar equations of the conics, higher plane curves. Prerequisite: Mathematics 162 or equivalent.

173. *Mathematics.* (3) Commercial Algebra. This course is designed for the major in business administration and business education. It considers the elementary concepts of algebra and relates them to the world of business. Prerequisite: Mathematics 112.

200. *Fundamental Concepts of Mathematics.* (3) Designed for the prospective teacher; aims to assist him or her in achieving a better understanding of the nature and development of critical thought and quantitative thinking. Emphasis is placed upon the major concepts of number, measurement, function, and proof.

261-2-3. *Calculus.* (15) Differential and integral calculus. Derivative of algebraic, trigonometric, exponential, and logarithmic functions with application to problems rising in engineering and the physical sciences; the indefinite and definite integral with applications; infinite series, approximate computation. Prerequisite: Mathematics 163.

311-312. *Introduction to Mathematical Statistics.* (6) The course considers the following topics: descriptive statistics; discrete and continuous random variables; moments; normal, binomial poisson, chi-square, t, and F distribution; combinatorial problems; correlation and progression. Prerequisites: Mathematics 261-2-3.

322. *History of Mathematics.* (3) Great names in the development of mathematics, tracing the development of each of the subject matter fields. Prerequisite: Math. 263.

331. *College Geometry.* (3) A study of the concepts of Euclidean Geometry with special emphasis on the nature of proof and of the nature of a logical or mathematical system. Prerequisite: Mathematics 263.

332. *College Geometry.* (3) A brief preview of Non-Euclidean Geometries—Projective Geometry, Elliptic Geometry, and Hyperbolic Geometry. A consideration of the Classical Greek Constructions in Geometry and their relation to the field of rational numbers. Prerequisite: Mathematics 331.

371. *Advanced Algebra.* (3) A continuation of College Algebra. Aimed at broadening the concepts of algebra for students intending to study higher mathematics or to teach mathematics on the secondary level. Prerequisite: Mathematics 263.

372-3. *Theory of Equations.* (6) Properties of polynomials, transformation of equations, elementary theorems on the roots of an equation, solution of equations by graphs, trigonometric solution of the cubic equation, Descartes' rules, Sturm's theorem, solutions of numerical equations, determinants, symmetric functions of the roots, ruler and compass constructions. Prerequisites: Mathematics 371 and Calculus, or the approval of the department.

374. *Introduction to Modern Algebra.* (3) Consideration will be given to the fundamental mathematical systems and concepts of modern algebra, including integral domains, groups, fields, rings, ideals, and vector spaces. Prerequisite: Mathematics 372.

421. *Advanced Calculus.* (3) Partial differentiations, multiple integrals; line, surface and volume integrals; infinite series. Prerequisite: Mathematics 263.

422-3. *Analytic Geometry of Space.* (6) Planes and lines in space; polar, spherical, and cylindrical coordinates; forms, classification, and properties of quadric surfaces; quadric surfaces in tetrahedral coordinates; transformation of space. Prerequisite: Consent of the Department.

BACHELOR OF ARTS OR BACHELOR OF SCIENCE PROGRAM

Freshman Year				Sophomore Year			
Quarter				Quarter			
Name of Course	I	II	III	Name of Course	I	II	III
English 101-2-3	3	3	3	English 211-2-3	3	3	3
Mathematics 161-2-3	5	5	5	Mathematics 261-2-3	5	5	5
Health 151	3			Biology or			
Music 131		3		Chemistry 111-2-3	4	4	4
Art 133			3	French or German	3	3	3
Soc. Science	3	3	3	Phy. Ed. 11-12-13	1	1	1
Phy. Ed. 11-12-13	1	1	1	Air Science II (Men)	1	1	1
Air Science I (M)	1	1	1				
Men	16	16	16	Men	17	17	17
Women	15	15	15	Women	16	16	16
Junior Year				Senior Year			
Quarter				Quarter			
Name of Course	I	II	III	Name of Course	I	II	III
Math. 371-2-3	3	3	3	Math. (Electives)	3	3	3
Math. (Electives)	3	3	3	or			
Physics 221-2-3	4	4	4	Math 450	3		
French or German	3	3	3	*Electives	12	15	15
*Electives (Math)	3	3	3				
	16	16	16		18	18	18

BACHELOR OF SCIENCE PROGRAM

(Teacher Certification)

Freshman Year				Sophomore Year			
		Quarter				Quarter	
Name of Course		Hours	Credit	Name of Course		Hours	Credit
		I	II			I	II
English 101-2-3		3	3	French or German		3	3
Math. 161-2-3		5	5	Mathematics 261-2-3		5	5
Health 151		3		Biology 111-2-3			
Music 131			3	or			
Art 133			3	Chemistry 111-12-13		4	4
Phy. Ed. 11-12-13		1	1	Education 201		3	
Soc. Science		3	3	Psychology 242-3			3
Air Science I (Men)		1	1	Phy. Ed. 20 to 50		1	1
				Air Science II (Men)		1	1
Men		16	16	Men		17	17
Women		15	15	Women		16	16
Junior Year				Senior Year			
		Quarter				Quarter	
Name of Course		Hours	Credit	Name of Course		Hours	Credit
		I	II			I	II
Math. 371-2-3		3	3	Math. (Electives)		3	3
Physics 211-2-3		4	4	Phil. 323			3
or Phy. 221-2-3				Science 471		3	
Educ. 301; 371; 378		3	3	Mathematics 450			3
English 211-2-3		3	3	Educ. 462		3	
Social Science		3		Psychology 463			3
Psych. 312			3	Health 212		3	
Math.			3	Education 472			9
*Electives (Math.)		3	3	*Electives		3	6
		19	19			15	15

434-5. *Analytical Geometry and Calculus.* (6) A two quarter course integrating the basic concepts of analytic geometry and calculus. The following basic concepts will be considered: the distance formula, slope and inclination of lines, equation and locus, conic sections, limits, derivatives, anti-derivatives, definite integrals, and the Mean Value Theorem. Prerequisite: College Algebra and Plane Trigonometry or their equivalent.

436. *Statistical Analysis.* (3) A one quarter course giving a treatment of the main framework of the theory of statistics. Attention is given to descriptive statistics. The following topics will be considered: (1) sample space probability and combinatorial problems, (2) random variable and distribution, (3) moments, (4) stochastic convergence and The Law of Large Numbers, (5) Chi Square, t, and F distributions, and (6) introduction to regression and correlation. Prerequisite: A working knowledge of calculus.

450. *Senior Project Writing.* (3) Individual student research, study, compilation, and presentation of special mathematical topics and related problems selected by the student and approved by the Department. Required of all prospective graduating seniors in the department. Prerequisite: Senior standing.

451-2-3. *Introduction to Analysis.* (9) Basic properties of the real number system; theory of limits, continuous functions, uniform continuity, and convergence; integration, differentiation, function of several real variables, implicit function theory. Prerequisite: Mathematics 263.

461. *Elementary Theory of Numbers.* (3) Number systems, divisibility, congruences, theorems of Fermat and Wilson, primitive roots, indices, quadratic reciprocity. Prerequisite: Consent of the department.

462-463. *Differential Equations.* (6) Classification and solution of common types of elementary differential equations; application of ordinary differen-

* All electives must be approved by the Department of Physics and Mathematics.

tial equations to problems arising in engineering and the physical sciences; introduction to partial differential equations. Prerequisite: Mathematics 263.

471. *The Teaching of Mathematics in the Secondary Schools.* (3) Lectures, discussions and reports on problems connected with the content and methods of mathematical instruction in the junior and senior high schools. Emphasis is on effective techniques of developing basic concepts in mathematics. Prerequisite: Calculus and/or approval of the Department.

480. (A through J.) *Advanced Topics in Mathematics.* (3) Different advanced topics in mathematics will be covered in this course. The subject matter to be offered in the course in any one quarter will be dependent upon student-need and faculty assignments. Prerequisite: Math 261-2-3 and permission of the Department of Physics and Mathematics.

DEPARTMENT OF SCIENCE EDUCATION

WILLIAM N. JACKSON, Ph.D., Head

The department's program is designed to meet the needs of three groups of students: 1. Those who wish to qualify for secondary school science teaching with certification in several science fields; 2. Those who desire a four-year general curriculum built around a core of natural science, which might be used to fulfill the entrance requirements of schools which prepare technicians for the several areas of medicine, health, earth sciences, and allied professions, and the scientific branches of government service; and 3. Those from other curricula of the university who wish to take service courses in the area of science education and/or geography.

To serve these needs, the department offers undergraduate curricula leading to the Bachelor of Science degree with a major in science education. These curricula are designed for prospective teachers of science.

There are two programs designed for undergraduate majors in science education. The first program, designated as the "Mathematics and Physical Science" curriculum, provides training for a student who desires teacher certification in mathematics and the physical sciences (i.e., physics and chemistry). A minimum of 75 quarter hours in mathematics and the physical sciences (chemistry, physics, geology, geography and astronomy) is required for such certification.

Of the 108 quarter hours required in the major area (mathematics, physics, chemistry, earth sciences and science education), 43 hours must be in courses at the junior and senior level. The total program requiring 193 quarter hours, must include a minimum of 72 quarter hours of courses at the 300-400 level.

The second program, designated as the "Science" curriculum, provides training for a student who desires teacher certification in the natural sciences (i.e., biology, chemistry, physics and general science). A minimum of 48 quarter hours in the natural sciences with courses in at least three of the following areas is required for certification: biology, chemistry, geology and physics. The student may include integrated science courses for credit toward certification.

Of the 91 quarter hours required in the major area (natural sciences and science education), 28 hours must be in courses on the junior and senior levels. The total program requiring 193 quarter hours, must include a minimum of 64 quarter hours of courses at the 300-400 level.

A minimum grade of C in each required course of the major sequence is necessary for maintenance of good standing in the selected curriculum.

An undergraduate minor program is available in geography. A minor in geography consists of a minimum of 27 quarter hours of courses in geography, including Geography 171-2-3.

Curriculum for the Bachelor of Science Degree with a Major in Science Education
"Mathematics and Physical Science"

Freshman Year				Sophomore Year			
Name of Course	Quarter			Name of Course	Quarter		
	I	II	III		I	II	III
Freshman English				English 211-2-3	3	3	3
101-2-3	3	3	3	Education 201	3		
Social Studies 111-2-3	3	3	3	Psychology 242-3		3	3
Mathematics 161-2-3	5	5	5	Physics 211-2-3	4	4	4
Chemistry 111-2-3	4	4	4	Geog. 171-2-3	3	3	3
Phy. Educ.	1	1	1	Chemistry 211-2	4	4	
Air Science 151-2-3 (M)	1	1	1	Soc. St. 114			3
				Phy. Educ.	1	1	1
				Air Science 251-2-3 (M)	1	1	1
Women	16	16	16	Women	18	18	17
Men	17	17	17	Men	19	19	18

Junior Year				Senior Year			
Name of Course	Quarter			Name of Course	Quarter		
	I	II	III		I	II	III
Chem. 311-2-3	4	4	4	Math. 471	3		
Educ. 371, 301, 387	3	3	3	Education 472		9	
Psychology 312			3	Psychology 463			3
Mathematics 311	3			Educa. 462			3
Geology 361			4	Sci. Educ. 450, 425, 427	3	3	3
Mathematics 261-2	5	5		Science Electives			
Geog. 261	3			(300-400 courses)	6		3
Health 151 or 212				Phil. 301 or 323	3		
or Nutrition 212		3					
Art 133 or Mus. 131			3				
Science 471		3					
	18	18	17		15	12	12

Curriculum for the Bachelor of Science Degree with a Major in Science Education
"Science Curriculum"

Freshman Year				Sophomore Year			
Name of Course	Quarter			Name of Course	Quarter		
	I	II	III		I	II	III
Mathematics 161-2-3	5	5	5	Soc. Stud. 114	3		
Chemistry 111-2-3	4	4	4	Health 151 or 212			
English 101-2-3	3	3	3	or Nutrition 212			3
Soc. Stud. 111-2-3	3	3	3	Physics 211-2-3	4	4	4
Phy. Educ.	1	1	1	Biology 101-2-3	4	4	4
Air Science (M) 151-2-3	1	1	1	English 211-2-3	3	3	3
				Education 201	3		
				Art 133 or Mus. 131		3	
				Psychology 242-3		3	3
				Phy. Educ.	1	1	1
				Air Science (M) 251-2-3	1	1	1
Women	16	16	16	Women	18	18	18
Men	17	17	17	Men	19	19	19

Junior Year				Senior Year			
Name of Course	Quarter			Name of Course	Quarter		
	Hours	Credit			I	II	III
Biology 202-3, 241	4	4	4	Sci. Educ. 450, 425, 427	3	3	3
Chemistry 211-2-3	4	4	4	Educ. 472		9	
Educ. 371, 301, 387	3	3	3	Chem. 361 and Electives			
Relig. 301 or Phil. 323	3			or			
Psych. 312, 463		3	3	Chem. 311-2-3	4	4	4
Geog. 261	3			Electives			
Educ. 462			3	(300-400 courses)	6		
Science 471		3		Geology 361			4
	17	17	17		13	16	11

COURSES IN SCIENCE EDUCATION
Undergraduate

121-2-3. *Introduction to Natural Science.* (12) Basic principles from the physical and biological sciences, the place of science in human culture, and the use of the scientific method in problem solving developed through experiences in the classroom, field, and laboratory. The first two quarters are devoted to selected experiences in the areas of astronomy, geology, physics, and chemistry. The third quarter deals with biological phenomena. Three lectures and one two-hour laboratory period.

301-2-3. *Science for Elementary Teachers.* (9) A three quarter course which combines a survey of the science subject matter suitable for elementary schools with the methods of teaching this science. Prerequisites: Science 121-2-3.

425. *Laboratory Practicum for Science Teachers.* (3) A laboratory course especially designed for science teachers. Students will have experience developing techniques to be used in caring for apparatus, tools, and materials, as well as for assembling and constructing demonstration and laboratory devices for science courses. Prerequisite: Science Education 471 and a major or minor in a natural science. Six laboratory periods.

427. *Philosophy of Science.* (3) Consideration of the evidence and logic upon which contemporary scientific concepts rest, and interplay of ideas, stresses, and new vistas that have caused continuous changes. The course assumes that the student possesses a broad background in the fundamental science subjects. Recommended for senior science majors and graduate students in the sciences.

441-2-3. *Science for Junior High School Teachers.* (9) A survey of the earth sciences and the physical sciences. First quarter: fundamental principles in astronomy, meteorology, and geology. Second quarter: fundamental concepts of chemistry; atomic structure and periodic grouping of elements, valence, molecular structure, combining weights, concentration, and solution. Third quarter: problems in modern physics; motion of bodies of changing mass, motion of bodies in various force fields, wave phenomena, and nuclear, atomic and molecular structure.

450. *Senior Project in Science Education.* (3) Individual student research and presentation of a special topic or problem selected by the student with the approval of the Department. Required of all candidates for the Bachelor's degree. Prerequisite: Completion of 75 per cent of the major work in science and senior standing in the Department.

471. *Teaching of the Sciences in Secondary Schools.* (3) Materials and methods suitable for use in junior and senior high schools stressed. A course for science majors who plan to teach in secondary schools. Prerequisites: Psychology 242-3, 312; Education 387, 371; and completion of at least 75 per cent of the major work in science.

COURSES IN GEOGRAPHY

171-2-3. *Elements of Geography*. A systematic approach to the study of the geographic regions of the world. Regional surveys include a special consideration of: physical character of the land, resources, economics, and cultures.

200. *Geography Laboratory*. (Non-credit) Designed to aid students who have difficulty in understanding the geographical method. It is open to all undergraduates of the University who feel that they need assistance in understanding the geographical method.

261. *Elements of Weather*. (3) A critical study of the atmosphere. This course will consider weather elements, weather observation, air masses, and their importance to weather.

271-2-3. *Fundamentals of Economic Geography*. (9) A survey of the elements of the human habitat with emphasis on major world resources. A consideration of the geographic facts which are important to the development of the major world industry areas.

361. *Geology*. (4) Deals with a study of the materials of the earth, the geologic processes and how they affect land forms and soil distribution. Three lectures and one laboratory or field period.

371. *United States and Canada*. (3) Recognition, analysis and interpretation of the basic physiographic features, resources and human adjustments within its several areas.

372. *Caribbean America*. (3) The northern countries of Latin America and the West Indies; their patterns of land occupancy; their commercial relation to the United States.

373. *South America*. (3) Regions and resources of South America beyond the Caribbean area with a special study of the distinctive role of each country according to its geographic significance.

381. *Europe*. (3) Regions and resources of Europe, and their relation to the development of the basic culture in different areas.

391. *Political Geography*. (3) A study of political relations, territorial aims and aspirations, boundaries and raw materials.

401. *The Middle East and India*. (3) Resources and economic activities in their regional setting; aggressive policies in territorial expansion.

411. *Southeastern Asia and Australia*. (3) Australia and the East Indies. A study of the physical, economic, and cultural elements visible as earth features.

412. *Africa*. (3) Resources and regions of Africa. Some consideration will be given to the French, British and other colonial policies in Africa.

421. *China*. (3) Regions and resources of China, with special emphasis on differences and similarities of each cultural and physical region. The placing of China as a whole in its proper continental and world framework is the final objective.

422. *The U.S.S.R.* (3) A geographical analysis of the terrain, resources and economic development of Russia and those areas in Europe and Asia largely under Russian influence.

462. *World Climates*. (3) Designed to effect a concept of the distribution of climates over the world and the reasons for this distribution. Of major importance in this course will be: controls of climate, a climatic classification by Koppen, and the relationship of man's activities and world climates.

DEPARTMENT OF SOCIAL SCIENCES

SHERMAN N. WEBSTER, Ed. D., Head

The Department of Social Sciences offers four curricula leading to the Bachelor's degree, namely History, Political Science, Sociology, Social Administration and courses in Economics.

The curriculum in History offers courses of study at the under-graduate and graduate levels.

The curriculum in Political Science offers courses of study at the under-graduate level leading to the degrees of Bachelor of Science and Bachelor of Arts. The curriculum also offers courses of study leading to teacher certification either for individual endorsement or group certification.

The curriculum in Sociology offers courses of study at the undergraduate level leading to the Bachelor of Arts and Bachelor of Science degrees. The Sociology curriculum also offers courses of study leading to teacher certification in terms of individual certification and group certification.

The curriculum in Social Administration offers courses of study at the under-graduate level leading to the degrees of Bachelor of Arts and Bachelor of Science.

COURSES IN SOCIAL STUDIES

Social Studies 111-112-113-114. Designed to acquaint the prospective teacher with an integrated, general educational approach to the understanding of basic factors in social life in terms of social adjustment and social problems, economic organization, political behavior, including international relations—all in an appropriate historical setting.

COURSES IN ECONOMICS

211-2-3. *Economic Principles*. (9) Principles and problems associated with the production, exchange, and the use of wealth.

204. *Consumer Economics*. (3) Designed to acquaint the student with the character and significance of the factors which determine and govern consumption, particularly as they are related to the prosperity and stability of the economic system.

301. *Labor Problems*. (3) A study of labor problems from union and management point of view with emphasis on the social and economic aspects of labor relations.

302. *Intermediate Economics*. (3) A major treatment of the problems of price determination, demand, and costs, and price determination and output under a system of pure competition and monopolistic competition.

303. *Recent Labor Legislation*. (3) A study of labor legislation from the Sherman Anti-Trust Law to the present, with emphasis on the sociological aspects of the legislation.

401. *Economic Development of the United States*. (3) A study in the progress in agriculture, industry, communication, transportation, banking and trade, and the developments in governmental economic policy.

402. *State and Local Taxation*. (3) A survey course devoted to tax problems of state and local governments; special emphasis on state questions.

403. *Introduction to Government Finance*. (3) Survey of institutions and theories of government finance. Effects of public expenditures; functions of public revenues; forms of taxation; tax criteria; determination of tax policy; public borrowing; debt management; fiscal policy.

CURRICULUM IN HISTORY

ALONZO T. STEPHENS, Ph.D., Coordinator

Instruction in the curriculum of history is designed to present the main aspects of the rise and development of civilization. The curriculum emphasizes the social, economic, and political phases of history, but it also deals with the institutional, cultural, diplomatic and religious phases. The aim of the curriculum is to enable students to read historical literature critically and to acquaint students with the facts in the development of man and of civilization.

Major: A student who makes history his major will be expected to complete 48 quarter hours. Those students who desire the Bachelor of Arts degree in history must fulfill 57 quarter hours included in the Liberal Education Core.

In addition the following departmental requirements are made: History 121-2-3; 201-2-3; 301-2-3; 331; 341-42; and 491 and/or 492.

Instruction in history is designed to give to the student within the first two years a knowledge of the important events, characters and development in the past of mankind. To achieve this aim, the curriculum requires that all majors have a general understanding of certain related fields.

Instruction in history during the junior and senior year is designed to prepare students for service as junior and senior high school teachers, and careers as instructors in Social Sciences and History. A student must submit to the department one research paper on some phase of history defined by the department. The paper must demonstrate adequate ability to do research in source materials, to analyze and interpret data and to present findings in an adequately documented paper written in acceptable English.

All majors in history are required to select a minimum of 15 quarter hours on the 300 and 400 levels from the following three areas: namely, (1) American History—United States (Colonial, Middle, Recent and Regional), (2) European History, and (3) World Civilization and Culture.

A major in history should include History 121-2-3; 301-2-3; 331; 341-42; and 491 and/or 492; nine additional hours in junior-senior courses in history; Economics 211-12-13; or Sociology 211-12-13 and Political Science 221-22-23.

A total of 218 quarter hours is required for graduation.

Minor: A student who makes history his minor will complete: History 121-2-3 at Freshman or Sophomore level or 301-2-3 if a Junior or Senior; History 201-2-3; History 331; History 341 or 342; History 491 or 492. The student must complete 9 hours in American History and 9 hours in European History. Each student with a minor must have a minimum of 27 hours. With approval of his major adviser and the Coordinator of History, additional courses in a special area may be taken. In this case, the student may take up to 48 hours of history.

Description of Programs

Students may select one of two programs, Bachelor of Arts—Non-teaching or Bachelor of Science for Teacher Certification. The Bachelor of Arts curriculum requires Foreign Language (9-27 hours). The number of quarter hours (less than 27) in language depends upon the number of hours in the one language acquired in high school. (See Requirements for Bachelor's Degree). The student selecting the Bachelor of Science Degree for Teacher Certification must follow that curriculum and include Social Studies, 111, 112, 113, 114 in his program.

SPECIAL INSTRUCTION FOR TEACHER CERTIFICATION

Students seeking a major or minor in the B. S. program (designed exclusively for teacher certification) are required to take the planned sequence for the History Curriculum—consisting of both the subject matter and professional courses. All "I" grades and other deficiencies must be removed before the student may apply for History 472.

Students seeking a minor in History are required to take nine (9) hours in American History 201, 202 and 203; three (3) hours of Tennessee History 341 or 342 and nine (9) hours in European History at the 300 or 400 level. Other requirements for teacher certification must be met:

1. Each student who desires to be a candidate for teacher certification will make application to the Director of Teacher Education the *third* quarter of his sophomore year after he has completed 30 quarter hours of work including the sophomore level of professional education.
2. Retention in the teacher education program will call for full compliance with standards and requirements of that program.

BACHELOR OF ARTS CURRICULUM—NON-TEACHING Curriculum in History

Freshman Year				Sophomore Year			
Name of Course	Quarter			Name of Course	Quarter		
	Hours	Credit			Hours	Credit	
English 101-2-3	3	3	3	English 211-12-13	3	3	3
Foreign Language	3	3	3	Foreign Language	3	3	3
History 121-2-3	3	3	3	Social Studies			
Science (Biology, Chemistry, or Natural Science)	4	4	4	(Economics, Polit. Sci., Sociology or Geography)	3	3	3
Mathematics 111-2-3 or 200	3	3	3	History 201-2-3	3	3	3
Physical Ed. 11-12-13	1	1	1	Psych. 221-2	3		3
Air Science I (Men)	1	1	1	Elective		3	
				Physical Ed. 20's to 50's	1	1	1
				Air Science II (Men)	1	1	1

Women	17	17	17
Men	18	18	18

Men	17	17	17
Women	16	16	16

Junior Year				Senior Year				
		Quarter				Quarter		
		Hours	Credit			Hours	Credit	
Name of Course		I	II	III	Name of Course	I	II	III
Political Science	.....	3			History 491 and/or			
History 341-2	.....	3	3		492	.....	3	3
History 301-2-3	.....	3	3	6	History (300-400)	.....	3	3
Minor	.....	3	3	3	Minor	.....	3	3
Foreign Language	....	3	3	3	History 450	.....		3
Electives (History)	.....	3	6	3	Electives (History)	.....	9	6
		18	18	15		18	18	15

CURRICULUM FOR TEACHER CERTIFICATION Curriculum in History

Freshman Year				Sophomore Year			
Name of Course	Quarter Hours Credit			Name of Course	Quarter Hours Credit		
	I	II	III		I	II	III
English 101-2-3	3	3	3	English 211-12-13	3	3	3
*Social Studies 111-12-13	3	3	3	History 121-2-3	3	3	3
Mathematics 111-12-13				Social Studies 114.....		3	
or 200	3	3	3	Music 131	3		
Health 211-12-13	3	3	3	Science (Biology, Chem., Physics, or Science Educ.)	4	4	4
Art 133	3			Education 201	3		
Physical Education 11-12-13	1	1	1	Psychology 242		3	
Air Science I (Men)....	1	1	1	Psychology 243			3
Electives		3	3	Physical Education 20's to 50's	1	1	1
				Air Science (Men)	1	1	1
				Nutrition			3

Men	17	17	17
Women	16	16	16

Men	18	18	18
Women	17	17	17

*NOTE: In order to satisfy the requirement of nine (9) hours of Social Sciences (Social Studies 111-12-13-14), a student may select six (6) hours of any one plus three (3) of another—Economics 211-12-13; Sociology 211-12-13 or Anthropology 221.

Junior Year				Senior Year			
Name of Course	Quarter			Name of Course	Quarter		
	Hours	Credit			Hours	Credit	
	I	II	III		I	II	III
History 201-2-3	3	3	3	History 301-2-3	3	3	3
Education 301	3			History 450	3		
Psychology 312		3		Hist. 471 (Educ. 471) ..	3		
History 341-2		3	3	History 491 or 492 ...	3	3	
Polit. Sci. 221-2-3	3	3	3	Education 462	3		
Economics or Sociology ..	3	3	3	Education 387		3	0
Education 371		3		Education 472		9	0
Electives (Hist. 300-400)	6		6	Psychology 463			3
				Electives	3		12
	18	18	18		18	18	18

COURSES IN HISTORY

Undergraduate

121-2-3. *The Growth of Civilization.* (9) A study of the contributions that all races and nations have made to our present civilization. Assigned readings, discussions, reports, and quizzes will comprise the type of work in this course. (Required of all Freshmen.)

201-2-3. *American History.* (9) History 201; An investigation of European culture and influence upon the American Colonies from 1492 to 1789. History 202; The beginning of our National State from 1789 to 1877. History 203; Post-Reconstruction Problems, the emergence of industrial life and the influence of technology in American civilization, the dominance of the Republican Party in National politics; rise of organized labor, urbanization, the rise of the Negro Rights Movement, American Imperialism, the First and Second World War Problems of the United States and the United Nations in the post World War II World.

211-12-13. *History of England.* (9) Not open to Freshmen. History of England to 1588; History of England, 1588-1763; History of England since 1763.

301. *Foundations of Modern Europe.* (3) This course deals with the important phases of the Protestant Revolt; the economic, political, and the religious background; the Lutheran and Reform Movements, with special reference to their political and theological trends; the early expansion of Europe.

302. *Foundations of Modern Europe.* (3) A study of the rise of Russia, Prussia and Austria; the decline of Sweden and Poland; the Intellectual Revolution; the continued expansion of Europe. Most emphasis will be placed upon the French Revolution; upon its causes; personalities and its constructive features; the career of Napoleon.

303. *Foundations of Modern Europe.* (3) A study of European History from 1815-1870. The beginning of the Industrial and Social Revolution of the nineteenth century; Vienna Peace Settlement; political reaction and revolution; the creation of Germany and Italy; the struggle of democracy and social reform in various European countries.

*331. *American Colonial History.* (3) The economic, social, religious, cultural, and political development of America from 1607-1789.

341-2. *History of Tennessee.* (6) A course in the cultural, economic, and political development of the State of Tennessee. Emphasis will be placed on the part the Negro has played.

361. (333) *Constitutional History of the United States to 1787.* (3) The origin, development and operation of the Constitution of the United States with attention to the factors which have influenced constitutional changes and the historic cases in which the provisions and principles of the Constitution have been interpreted and applied by the courts. Prerequisite: History 201-2-3 or Political Science 221-2-3.

362. *Constitutional History of the United States 1789-1860.* (3) Continuation of History 361.

363. *Constitutional History of the United States 1860 to Present.* (3) Continuation of History 362.

*371. (403) *Economic History of the United States 1603-1860.* (3) A study of the economic development of the United States from the colonial period to the present with particular emphasis on the influence of economic forces in the shaping of social and political growth and change. Prerequisite: History 201-2-3.

*372. *Economic History of the United States 1860 to Present.* (3) Continuation of History 371.

*381-2. (312) *Civil War and Reconstruction.* (6) The study of the factors leading to the secession and an analysis of the problems of reconstruction.

385-6-7. *Vital Topics.* (9) The study, analysis, and interpretation of vital topics in the changing world of today. The vital current economic, social, religious, and political problems that confront the world and the United States will be presented, analyzed, discussed, and interpreted. Not restricted to Area of History.

*391-2-3. *Russian History.* (9) The background, causes and events deals with the emergence of Russia from barbarism to a National State and her attempts to become a Westernized nation. A study of Russia's political development will be made from Alexander I to the present day. The many changes incident to her rise from a feudal state to a dynamic revolutionary state will be considered. Special emphasis will be laid upon the impact of successive revolutionary precursor of Marxian Socialism. Russia's historic mission in foreign affairs will be employed as a guide toward an understanding of her present-day aims.

*401-2-3. *Contemporary World History.* (9) The background, causes and events of the First World War; the Paris Peace Conference and its later problems; the League of Nations; the rise of Communism, Fascism, Nazism; development in education, art, literature and music and religion; the East in Revolt; the new totalitarian states; and finally, the second world war and present issue.

*421-2-3. (422) *Diplomatic History of the United States.* (9) A survey of the foreign relations of the United States, with special reference to the establishment and development of those major policies which have determined American international action.

*433-4. *The British Empire.* (6) A study of the rise and expansion of the British Empire and its influence on world history of 1783. Topics: The establishment of colonies in the East and West Indies; India, Africa, and North America under the Stuarts; the struggles with Spain, Holland, and France, for world domination; Merchantilism and Colonial Administration; the American revolution since 1783; the lapse and revival of imperial spirit in Egypt, Australia, New Zealand, and Canada; Protectorates, Mandates, crown colonies, and "spheres of influence," the world importance of the British Empire; and the recent developments in British Dominion Government.

*442-3. *Renaissance and Reformation.* (6) The first quarter of this course will be a survey of Europe between 1250 and 1600. Special attention will be given to the Renaissance, the artistic, literary, political, and commercial growth. During the second quarter special emphasis will be given the Protestant Reformation and the Catholic Counter Reformation.

450. *History.* (3) The writing of senior projects of history.

*451-2-3. *Latin American History.* (9) A general study of the history of Mexico, Central and South America. (1) The Colonial Period, wars for independence. (2) Recent political history with the economic resources and trade relations emphasized. (3) The development of the foreign relations as well as the Western Hemisphere ideology of solidarity and mutual aid.

471. *The Teaching of History.* (3) The theory materials for the teaching of history will be reviewed. Open to majors in the department who plan to teach. Assigned readings, personal investigations, field work and demonstrations in class.

*481-2-3. *World Civilizations.* (9) The study of the political, economic, social and international relations of the Far East, Near East, India, and Africa.

The relation of these countries and the role each played in the expansion of Western people will be emphasized.

*491. (411) *The Negro in American History*. (3) A study of the role and impact of the Negro in the exploration, discovery and early period, and the growth of American life to 1865.

*492. (411) *The Negro in American History*. (3) The part played by the Negro since 1865 in the economic, political, and cultural development of the United States.

CURRICULUM IN POLITICAL SCIENCE

GEORGE L. DAVIS, Ph.D., Coordinator

The general objectives of the curriculum in Political Science are: (1) to provide a broad and basic background for understanding and evaluating functions and problems of states, their governments, citizenship and human relationships; (2) to provide a broad over-all picture of the economic, social and psychological factors which underlie political phenomena; (3) to prepare teachers and investigators for instructional and research positions and government service; and (4) to provide the background for students who intent to specialize in social science, or in law.

The curriculum offers courses of study at the undergraduate level leading to the degrees of Bachelor of Science and Bachelor of Arts in Political Science.

Students desiring the Bachelor of Arts degree or the Bachelor of Science degree without certification are required to take a minimum of one major and one minor.

Students desiring to qualify for teacher certification may do so by selecting courses prescribed by the State Board of Education, Division of Certification. Two types of certification are offered: (a) individual and (b) group. In addition, provisions are made for a second teaching area. Unless a student has initially selected a course of study leading to certification, additional hours will be required.

In addition to the University requirements for graduation, the minimum undergraduate curriculum requirements are: (1) 206 quarter hours for the Bachelor of Arts and the Bachelor of Science degrees, including individual and group certification, of which a minimum of 66 quarter hours for each degree must be completed in 300 and 400 level courses; (2) 48 quarter hours in Political Science of which a minimum of 27 quarter hours must be completed in 300 and 400 level courses for the Bachelor of Arts degree, the Bachelor of Science degree with individual and group endorsement; (3) 54 quarter hours in the social studies of which a minimum of 15 quarter hours must be completed in 300 and 400 level courses for group certification.

Students with a minor in Political Science must complete a minimum of 18 quarter hours in 300 and 400 level courses in addition to the basic courses, Political Science 221-2-3.

* Approved for graduate credit. A student may select only nine quarter hours of these courses for graduate credit.

* Approved for graduate credit.

BACHELOR OF SCIENCE WITHOUT CERTIFICATION

Freshman Year				Sophomore Year			
Quarter				Quarter			
Name of Course	I	II	III	Name of Course	I	II	III
Air Science (Men)				Air Sci. 251-2-3	1	1	1
151-2-3	1	1	1	English 211-2-3	3	3	3
English 101-2-3	3	3	3	Health 151	3		
Geography 171-2-3	3	3	3	History 201-2-3	3	3	3
History 121-2-3	3	3	3	Music 131			3
Math. 111-2-3	3	3	3	Phy. Ed. 20's-50's	1	1	1
Phy. Ed. 11-12-13	1	1	1	Pol. Sci. 221-2-3	3	3	3
Science, Biol., Chem.				Psychology 221-2	3	3	
or Physics (one)	4	4	4	Speech 202-3		3	3
Men	18	18	18	Men	17	17	17
Women	17	17	17	Women	16	16	16
Junior Year				Senior Year			
Quarter				Quarter			
Name of Course	I	II	III	Name of Course	I	II	III
Accounting 211-2-3	3	3	3	Electives		6	3
Econ. 211-2-3	3	3	3	Geography 392	3		
Pol. Sci. 313	3			History 300's-400's	3		
Pol. Sci. 321-2-3	3	3	3	Hist. 491	3		
Pol. Sci. 341-2-3	3	3	3	Philos. 323		6	3
Psychology 312-21		3	3	Philos. 323	3		
Sociology 211-2-3	3	3	3	Pol. Sci. 362-3		3	3
				Soc. Adm. 463			3
	18	18	18		18	18	15

BACHELOR OF ARTS

Freshman Year				Sophomore Year			
Quarter				Quarter			
Name of Course	I	II	III	Name of Course	I	II	III
Air Science (men)				Air Science (men)			
151-2-3	1	1	1	251-2-3	1	1	1
English 101-2-3	3	3	3	English 211-2-3	3	3	3
*Foreign Language	3	3	3	*Foreign Language	3	3	3
History 121-2-3	3	3	3	History 201-2-3	3	3	3
Mathematics 111-2-3	3	3	3	Phy. Ed. (20's to			
Phy. Ed. 11-12-13	1	1	1	50's)	1	1	1
Science, Bio., Chem.				Pol. Sci. 221-2-3	3	3	3
or Physics (one)	4	4	4	Psychology 221-2, 312..	3	3	3
Men	18	18	18	Men	17	17	17
Women	17	17	17	Women	16	16	16
Junior Year				Senior Year			
Quarter				Quarter			
Name of Course	I	II	III	Name of Course	I	II	III
Economics 211-2-3	3	3	3	Electives		3	3
Geography 171-2	3	3		Geography 391	3		
Pol. Sci. 313	3			Health 151	3		
Pol. Sci. 321-2-3	3	3	3	History 300's-400's		6	3
Pol. Sci. 341-2-3	3	3	3	History 491	3		
Psychology 321			3	Music 131		3	
Sociology 211-2-3	3	3	3	Philosophy 323	3		
Speech 202-3		3	3	Pol. Sci. 450 etc.	6	6	6
				Soc. Admin. 463			3
	18	18	18		18	18	15

*Language requirements vary from 9-27 hours, depending upon the student's proficiency in a given language, or number of high school units completed in a given modern foreign language.

CERTIFICATION BACHELOR OF SCIENCE

Group Endorsement

Freshman Year				Sophomore Year			
Quarter Hours Credit				Quarter Hours Credit			
Name of Course	I	II	III	Name of Course	I	II	III
Air Science 151-2-3 ...	1	1	1	Air Science 251-2-3 ...	1	1	1
Art 133		3		Educ. 201		3	
English 101-2-3	3	3	3	Ed. Psych. 242-3		3	3
Health 151	3			English 211-2-3	3	3	3
Mathematics 111-2-3 ...	3	3	3	Health 211	3		
Music 131			3	History 201-2-3	3	3	3
Nat. Sci., Biol.				Phys. Ed.			
Chem. etc. (one) ...	4	4	4	(20's-50's)	1	1	1
Phys. Ed. 11-12-13 ...	1	1	1	Pol. Sci. 221-2-3	3	3	3
Soc. Studies 111-2-3 ...	3	3	3	Pol. Sci. 313			3
				Soc. Stud. or			
				Soc. Sci.	3		
Men	18	18	18	Men	17	17	17
Women	17	17	17	Women	16	16	16

Junior Year				Senior Year			
Quarter Hours Credit				Quarter Hours Credit			
Name of Course	I	II	III	Name of Course	I	II	III
Educ. 371, 301	3		3	Econ. 211-2-3	3	3	3
Educ. 387, 462	3	3		Educ. 471-2	3		9
Geog. 171-2-3	3	3	3	History 301-2-3	3	3	3
Pol. Sci. 321-2-3	3	3	3	Philosophy 323		3	
Pol. Sci. 341-2-3	3	3	3	Pol. Sci. 450 etc.	6	6	
Pol. Sci. 362-3		3	3	Psych. 312, 463		3	3
Soc. 211-2-3	3	3	3				
	18	18	18		15	18	18

BACHELOR OF SCIENCE WITH CERTIFICATION

Individual Endorsement

Freshman Year				Sophomore Year			
Quarter Hours Credit				Quarter Hours Credit			
Name of Course	I	II	III	Name of Course	I	II	III
Air Science 151-2-3 ...	1	1	1	Air Science 251-2-3 ...	1	1	1
Art 133		3		Education 201		3	
English 101-2-3	3	3	3	Ed. Psych. 242-3		3	3
Health 151	3			English 211-2-3	3	3	3
Mathematics 111-2-3 ...	3	3	3	Health 211	3		
Music 131			3	History 201-2-3	3	3	3
Natural Sci., Biol.				Phys. Ed. 20's-50's	1	1	1
Chem. etc. (one) ...	4	4	4	*Soc. Studies or			
Phys. Ed. 11-12-13 ...	1	1	1	Soc. Sci.	3		
*Soc. Studies or				Pol. Sci. 313	3	3	3
Soc. Sci.	3	3	3	Pol. Sci. 221-2-3	3		
Men	18	18	18	Men	17	17	17
Women	17	17	17	Women	16	16	16

* Math. 111-2-3 may be substituted with Math. 131-2-3, or 161-2-3, or 200.

Junior Year				Senior Year			
Quarter Hours Credit				Quarter Hours Credit			
Name of Course	I	II	III	Name of Course	I	II	III
Educ. 371, 301	3		3	Educ. 471-72	3		9
Educ. 387, 462	3	3		History 301-2-3	3	3	3
History 211-2-3	3	3	3	History 491	3		
Pol. Sci. 321-2-3	3	3	3	Philos. 323			3
Pol. Sci. 341-2-3	3	3	3	Philos. 323	3		
Pol. Sci. 362-3		3	3	Psych. 312, 463		3	3
Soc. 211-2-3	3	3	3	Pol. Sci. 450, etc.	6	6	
	18	18	18		18	18	15

COURSES IN POLITICAL SCIENCE

Political Science 221-2-3 are prerequisites to all other courses in the curriculum.

Unless otherwise designated all courses meet three one-hour periods per week.

221-2-3. *American Government: National, State and Local.* (9) 221-2 *National:* An introductory course which deals with the foundation, organization, and principles of the national government. Attention focused on the relations of the citizens to the government and the rights, duties, and obligations of citizens. 223. *State and Local:* An analysis of the structure, principles and operations of the state and local units of government. Illustrative material is drawn largely from Tennessee.

312. *The Legislative Process.* (3) An examination of the structure and methods of transacting business in the American Congress and State Legislatures.

313. *Tennessee State Government.* (3) Study of Tennessee government from the functional point of view emphasizing political activities, taxation, education, social welfare and economic services of the government.

321-2-3. *Comparative European Government.* (9) An analysis of the government of selected European countries with special attention given to the development of their political systems both in theory and practice. Comparison with American institutions emphasized.

331-2. *Latin American Government.* (6) An analysis of the political and constitutional development of the Latin American states with emphasis on political concepts, policies, and international relations.

333. *Far Eastern Government.* (3) Constitutional and political development in China and Japan. Consideration given to policies and international relations.

341-2-3. *International Relations.* (9) An examination of the present-day relations and problems among states of the world and the major factors which underlie and influence these relations. Prerequisites: Political Science 321-2-3.

351. *Government of the British Commonwealth of Nations.* (3) An examination of the government of the United Kingdom and the organization of that government as it bears upon the Commonwealth. Attention focused on an analysis of the problems of the Dominions and dependent areas with special consideration given to the problems of imperial strategy and their bearings on international policies.

353. *Government of Russia.* (3) Deals with the theory, structure, functions, operations, powers, problems and trends of the Russian government under Soviet rule.

362-3. *American Political Parties and Policies.* (6) The first quarter deals with an analysis of the dynamics of American politics with emphasis upon the factors influencing the formation of public opinion and the role of pressure

* Mathematics 131-2-3 may be substituted with Math. 111-2-3 or 200. Soc. Studies or Soc. Sci. includes one three quarter series equal to nine hours and a fourth quarter of one three hour course in a second field. Courses may be elected from Soc. Studies 111-112-113, Econ. 201-2-3, Hist. 121-2-3. Junior year history must be European.

groups. The second quarter is designed to analyze the formation of political parties; nominations and elections; methods of representation and voting; and the importance of parties in American Government. Prerequisite: Political Science 362.

373. *Propaganda and Public Opinion.* (3) An analysis of the purposes and techniques of propaganda and the functions and expression of public opinion.

421-2-3. *Public Administration.* (9) Principles of public administration; structure and organization; financial management; administrative responsibility; and the relation between the administration and other branches of government in the United States.

431-2-3. *American Constitutional Law.* (9) Devoted to a study of the sources, principles and powers of government in the United States as embodied in the Constitution and judicial decisions in leading cases.

441-2. *International Law.* (6) A study designed to examine the rights and duties of states in their normal relations; war neutrality; intervention and blockade.

450. *Senior Project Writing.* (3)

451-2. *Government and the Economic Order.* (6) Deals with constitutional principles as they apply to the regulation of business. Emphasis placed on Federal and State regulation of public utilities, labor, securities, communications, transportation, housing, commerce and social security.

453. *American Diplomacy.* (3) Examines the more important principles of American diplomacy and their applications as basis for the understanding of the foundation of American foreign policy. Prerequisites: Political Science 341-2-3.

461. *Western Political Thought.* (3) Origin and evolution of the major political concepts of the Western World.

462-3. *American Political Thought.* (6) An intensive study of main currents in American Political Thought from the Colonial Period to the present.

465. *Contemporary Political Thought.* (3) An examination of the changing political ideas since the late Nineteenth century revolutions as basis for contemporary systems of Democracy, Communism and Fascism.

CURRICULUM IN SOCIAL ADMINISTRATION

ANNIE B. MARTIN, M.S.S.W., Coordinator

The pre-professional social work curriculum is designed to provide the student with an introductory knowledge of the generic principles, skills, and understanding of human behavior which is necessary for graduate study in social work and essential to the practice of social work as a junior worker in private and public social welfare agencies.

Students are also required to do seventy-two hours of Field Work in selected social agencies. This is a requirement of the American Association of Schools of Social Administration, which is the accrediting body and of which we are a member. The purpose of field work is to provide the student with the opportunity of applying theory to actual practice in a controlled setting under the supervision and guidance of a qualified practitioner. He is then evaluated upon the basis of his growth and development on the job.

The Curriculum of Social Administration offers the Bachelor of Science and the Bachelor of Arts Degrees.

In addition to the University requirements for graduation, the minimum Curriculum requirements are: (1) 192 quarter hours for the Bachelor of Arts degree, and 192 quarter hours for the Bachelor of Science degree, of which a minimum of 66 quarter hours for each degree must be completed in 300 and 400 level courses; (2) 45 quarter hours in the curriculum of which a minimum of 24 quarter hours must be completed in 300 and 400 level courses for the Bachelor of Arts and Bachelor of Science degrees.

Students who minor in the Curriculum must complete a minimum of 18

quarter hours in 300 and 400 level courses in addition to the basic courses in Sociology: Sociology 211, 212, 213, 322, 412 and 451.

CURRICULUM IN SOCIAL ADMINISTRATION

Bachelor of Science

Freshman Year				Sophomore Year			
		Quarter				Quarter	
Name of Course		Hours	Credit	Name of Course		Hours	Credit
		I	II			I	II
English 101-2-3		3	3	English 211-2-3		3	3
History 121-2-3		3	3	Sociology 211-2-3		3	3
Biology 101-2-3		4	4	Pol. Science 221-2-3		3	3
Mathematics 111-2-3		3	3	Psychology 221-2-3		3	3
Phy. Ed. 11-12-13		1	1	Economics 211-2-3		3	3
Air Science I (M)		1	1	Phy. Education			
Geography 171-2-3		3	3	20's to 50's		1	1
				Air Science II (M)		1	1
Women		17	17	Men		17	17
Men		18	18	Women		16	16

Junior Year				Senior Year			
		Quarter				Quarter	
Name of Course		Hours	Credit	Name of Course		Hours	Credit
		I	II			I	II
History 201-2-3		3	3	Psy. 311		3	
Sociology 322			3	Sociology 461		3	
Sociology 303			3	Social Adm. 443			3
Psychology 242			3	Social Adm. 421-2-3		3	3
Sociology 351		3		Social Adm. 482			3
Soc. Adm. 302			3	Psychology 323			3
Soc. Adm. 332			3	Social Adm. 450			3
Soc. Adm. 341		3		Zoology 202			4
Sociology 412			3	Electives		3	
Sociology 451			3	Polit. Science 313		3	
Soc. Adm. 463			3	Social Adm. 471-3		3	3
Music 131		3		Social Adm. 433			3
Art 133		3		Electives		3	
Electives			3				
		15	18			18	13
			15				18

Bachelor of Arts

Freshman Year				Sophomore Year			
		Quarter				Quarter	
Name of Course		Hours	Credit	Name of Course		Hours	Credit
		I	II			I	II
English 101-2-3		3	3	English 211-2-3		3	3
Foreign Language		3	3	Foreign Language		3	3
History 121-2-3		3	3	Sociology 221-2-3		3	3
Biology 101-2-3		4	4	Pol. Sci. 221-2-3		3	3
Mathematics 131-2-3		3	3	Psychology 221-2-3		3	3
Phy. Ed. 11-12-13		1	1	Phy. Ed. 20's to 50's		1	1
Air Science I (M)		1	1	Air Science II (M)		1	1
Men		18	18	Men		17	17
Women		17	17	Women		16	16

Junior Year				Senior Year			
Quarter				Quarter			
Name of Course	I	II	III	Name of Course	I	II	III
History 201-2-3	3	3	3	Sociology 461	3		
Foreign Language or Economics 211-2-3	3	3	3	Psychology 323			3
Psychology 242	3			Soc. Adm. 421-2-3	3	3	3
Sociology 322		3		Social Adm. 433			3
Social Adm. 302		3		Social Adm. 471-3	3		3
Social Adm. 332		3		Social Adm. 482		3	
Social Adm. 341	3			Zoology 202		4	
Sociology 412			3	Social Adm. 450		3	
Sociology 451	3			Electives		3	6
Sociology 303			3	Soc. Adm. 443		3	
Social Adm. 463			3				
Political Sci. 313	3						
	18	15	15		16	15	18

COURSES IN SOCIAL ADMINISTRATION

302. *Social Recreation I.* (3) Designed to develop skill in quiet and active games, play party games, and singing games with emphasis on the dynamics of play leadership and program planning.

303. *Social Recreation II.* (3) Designed to develop skills in the use of dramatics, folk rhythms and square dancing.

331. *Social Welfare—Its Structure and Function.* (3) A study designed to show the many governmental and non-governmental agencies who contribute to the social welfare of all American citizens. It will also reflect a way of life, and give an awareness of the multiple, flexible possibilities of future welfare programs.

332. *Casework Services for Children.* (3) A course designed to provide students with knowledge of the principles and practices of the seven basic casework services for children whose parents need help in providing adequately for their care and guidance. Each service is defined with discussion as to the special help offered to a child with a description of the conditions under which it is most effective.

341. *Survey of the Field of Social Work.* (3) A survey of contemporary social work by functional groupings such as Case Work, Group Work, and Community Organization. Emphasis on objectives, processes and historical development of the Social Work idea.

421. *Introduction to Social Casework.* (3) A limited beginning in Social Case Work and an introductory consideration of the basic skills in working with people. Emphasis is placed on meeting needs of individuals and families, individualizing people, understanding attitudes and using community resources. Prerequisite: 341.

422. *The Interview and Case Recording.* (3) A course designed to develop skills in the techniques and methods of interviewing and recording. Special emphasis upon the understanding of one's self and generic human behavior and office procedures as it relates to the welfare office. Prerequisites: Soc. Adm. 341, 421.

423. *Field Work (Case).* (3) Supervised practice in Social Agencies emphasizing case work skills within the limitations of the agencies functioning. Prerequisites: Soc. Adm. 341, 421, 422, and 463-443.

433. *Social Work and Health Problems.* (3) Elementary medical information for social workers. The course revolves around the symptoms, and etiology of common diseases; the responsibility of the social worker to detect, report, and to organize medical care as resources in treatment. It also includes the public health agencies. Prerequisite: Soc. Adm. 341.

443. *Problems of the Aged.* (3) A course designed to present something of our population changes, to examine the financial dependence or independence

of the aged, to analyze some of their needs, and to discuss the range, variety and helpfulness of the social services that are available or are being developed by, for and with the aged. Prerequisites: Soc. Adm. 341, 421, and 433.

450. *Senior Project Writing.* (3)

463. *Community Organizations.* (3) Deals with the methods and principles involved in analyzing community needs, developing programs to meet these needs in terms of community resources and securing community interests, leadership and support. Prerequisite: Soc. Adm. 341.

471. *Introduction to Group Work.* (3) Examines the process of social group work as a basic approach and method in social work and acquaints the student with some of the principles, methods, and techniques of Group Work. Prerequisite: Soc. Adm. 341.

473. *Field Work.* (Group) (3) Supervised practice in selected Social Agencies which provides an opportunity for students to apply theory to actual practice. Emphasizing placement in a group work agency and professional growth on the job. Prerequisites: Social Adm. 302, 303, 341, 443, 463, 471, and Art 241.

482. *Introduction to Group Leadership.* (3) Analysis of leadership as to types and purpose, with emphasis on its application to activities, age range, sex and program development. Prerequisites: 341, 471. Art. 241.

CURRICULUM IN SOCIOLOGY

The general design of the curriculum in sociology embraces a four-fold objective: (1) to provide systematic framework for understanding the nature of human relationships; (2) to train students for employment in civil service, teaching and community organization; (3) to prepare students for advanced specialized study in Sociology; and (4) to train students to conduct research in the fundamental problems of social science.

The Curriculum in Sociology offers courses of study at the undergraduate level leading to the degree of Bachelor of Arts and Bachelor of Science.

Students in the curriculum are encouraged to take a minor in a related field. ogy 322, 303, 461, 412, 451, 462.

Students in the curriculum are required to take a minimum of one major and one minor.

Students desiring to qualify for certification may do so by selecting courses prescribed by the State Board of Education, Division of Certification. Two types of certification are offered: (a) individual certification and (b) group certification. In addition, provisions are made for a second teaching area. Unless a student initially selects a course of study leading to certification, additional hours will be required.

In addition to the University requirements for graduation, the minimum curriculum requirements are: (1) 192 quarter hours for the Bachelor of Arts degree, 192 quarter hours for the Bachelor of Science degree, including individual or group certification, of which a minimum of 66 quarter hours for each degree must be completed in 300 and 400 level courses; (2) 45 quarter hours in the curriculum of which a minimum of 24 quarter hours must be completed in 300 and 400 level courses for the Bachelor of Arts and Bachelor of Science degrees; (3) 30 quarter hours in Sociology of which a minimum of 21 quarter hours must be completed in 300 and 400 level courses for the individual certification; (4) 54 quarter hours in the social studies of which a minimum of 45 quarter hours must be completed in 300 and 400 level courses for group certification.

Students who minor in the curriculum must complete a minimum of 18 quarter hours in 300 and 400 level courses in addition to the basic courses, Sociology 211, 212, and 213. The following special courses are required: Sociology 322, 303, 461, 412, 451, 462.

NON-TEACHING CURRICULUM IN SOCIOLOGY

Bachelor of Arts

Freshman Year				Sophomore Year			
Quarter Hours Credit				Quarter Hours Credit			
Name of Course	I	II	III	Name of Course	I	II	III
English 101-2-3	3	3	3	English 211-2-3	3	3	3
Foreign Language	3	3	3	Foreign Language	3	3	3
History 121-2-3	3	3	3	Sociology 211-2-3	3	3	3
Biology, Chemistry	4	4	4	Psychology 221-2-3	3	3	3
Mathematics 111-2-3	3	3	3	Economics 211-2-3	3	3	3
Physical Education				Physical Education			
11-12-13	1	1	1	20's to 50's	1	1	1
Air Science 151-2-3				Air Science 251-2-3			
(Men)	1	1	1	(Men)	1	1	1
Men	18	18	18	Men	17	17	17
Women	17	17	17	Women	16	16	16

Junior Year				Senior Year			
Quarter Hours Credit				Quarter Hours Credit			
Name of Course	I	II	III	Name of Course	I	II	III
History 201-2-3	3	3	3	Health 301	3		
Pol. Sci. 221-2-3	3	3	3	Geography 171-2-3	3	3	3
Psychology 242			3	History 300's or 400's			3
Speech 202		3		Sociology 411	3		
Sociology 221	3			Sociology 461	3		
Sociology 322		3		Sociology 491	3		
Sociology 351	3			Sociology 442		3	
Sociology 303			3	Sociology 462		3	
Sociology 393	3	3	3	Sociology 450			3
Foreign Language or				Soc. Adm. 463			3
Music 131 and Pol.				Electives	3	6	3
Sci. 313, Electives	3	3	3				
Men	18	18	18	Men	18	15	15
Women	17	17	17	Women	16	16	16

Bachelor of Science

Freshman Year				Sophomore Year			
Quarter Hours Credit				Quarter Hours Credit			
Name of Course	I	II	III	Name of Course	I	II	III
English 101-2-3	3	3	3	English 211-2-3	3	3	3
History 121-2-3	3	3	3	Sociology 211-2-3	3	3	3
Biology 101-2-3	4	4	4	Psychology 221-2	3	3	
Geography 171-2-3	3	3	3	Economics 211-2-3	3	3	3
Mathematics 111-2-3	3	3	3	Sociology 301			
Physical Ed.				or Econ. 301	3		
11-12-13	1	1	1	Physical Ed.			
Air Science				20's to 50's	1	1	1
151-2-3 (M)	1	1	1	Air Science			
				251-2-3 (M)	1	1	1
				Electives			
				Music 131		3	3
Men	18	18	18	Men	17	17	17
Women	17	17	17	Women	16	16	16

Junior Year				Senior Year			
Quarter Hours Credit				Quarter Hours Credit			
Name of Course	I	II	III	Name of Course	I	II	III
History 201-2-3	3	3	3	Health 301	3		
Pol. Sci. 221-2-3	3	3	3	Sociology 472 or 451	3		
Pol. Sci. 313			3	History 300's or 400's			3
Philosophy 323		3		Sociology 411	3		
Health 151	3			Sociology 461	3		
Sociology 221	3			Sociology 491	3		
Sociology 322		3		Sociology 471		3	
Sociology 351	3			Sociology 462		3	
Sociology 303			3	Sociology 450		3	
Sociology 393		3		Social Adm. 463			3
Psychology 242			3	Sociology 332			3
Electives	3	3		Sociology 482			3
Men	18	18	15	Electives	3	9	
Women	17	17	12	Women	18	18	12

TEACHING CURRICULUM IN SOCIOLOGY

Recommended Schedule for Four-Year College Major in Sociology Group Endorsement

Freshman Year				Sophomore Year			
Quarter Hours Credit				Quarter Hours Credit			
Name of Course	I	II	III	Name of Course	I	II	III
English 101-2-3	3	3	3	Music 131	3		
Natural Science				English 211-2-3	3	3	3
(Biology, Physics, or				Nutrition 212		3	
Chemistry)	4	4	4	Education 201	3		
Math. 111-2-3				Health 213			3
or Math. 200	3	3	3	Psychology 242-3		3	3
Sociology 211-2-3	3	3	3	Economics 211-2-3	3	3	3
Physical Education				Physical Education			
11-12-13	1	1	1	20's to 50's	1	1	1
Geography 171-2-3	3	3	3	History 121-2-3	3	3	3
Air Science 151-2-3				Air Science 251-2-3			
(Men)	1	1	1	(Men)	1	1	1
Men	18	18	18	Men	17	17	17
Women	17	17	17	Women	16	16	16

Junior Year				Senior Year			
Quarter Hours Credit				Quarter Hours Credit			
Name of Course	I	II	III	Name of Course	I	II	III
History 201-2-3	3	3	3	History 301-2-3	3	3	3
Pol. Sci. 221-2-3	3	3	3	Education 387	3		
Psychology 311	3			Psychology 463		3	
Philosophy 323 or				Sociology 471 (Ed. 471)		3	
Religion 301		3		Education 462	3		
Psychology 312			3	Education 472		9	
Education 301	3			History 491 or 492	3		
Education 371	3			Soc. Adm. 463		3	
Pol. Sci. 313			3	Electives	6	6	
Sociology 322-412, 461, 491,							
450, 303	3	9	6				
Men	18	18	18	Men	15	18	12
Women	17	17	12	Women	16	16	12

Individual Area Endorsement							
Freshman Year				Sophomore Year			
Name of Course	Quarter			Name of Course	Quarter		
	Hours	Credit			Hours	Credit	
English 101-2-3	3	3	3	Education 201	3		
Natural Science (Biology, Physics, or Chemistry)	4	4	4	English 211-2-3	3	3	3
Math. 111-2-3				History 201-2-3	3	3	3
or Math. 200	3	3	3	Psychology 242		3	
Sociology 211-2-3	3	3	3	Psychology 243			3
Physical Education				History 121-2-3	3	3	3
11-12-13	1	1	1	Pol. Sci. 221-2	3	3	
Air Science 151-2-3				Pol. Sci. 313			3
(Men)	1	1	1	Physical Education			
Geography 171-2-3	3	3	3	20's to 50's	1	1	1
				Air Science 251-2-3			
Men	18	18	18	(Men)	1	1	1
Women	17	17	17				
				Men	17	17	17
				Women	16	16	16
Junior Year				Senior Year			
Name of Course	Quarter			Name of Course	Quarter		
	Hours	Credit			Hours	Credit	
Sociology 221	3			Education 387	3		
Education 371			3	Psychology 463		3	
Nutrition 212		3		Education 462	3		
Health 213			3	Education 471		3	
Philosophy 323 or				Education 472			9
Religion 301		3		Electives	9	6	6
Psychology 312			3	Education 301	3		
Sociology 322		3		Sociology 462		3	
Sociology 351	3						
Sociology Elec. 300	6	9	9				
Music 131	3						
	15	18	18		18	15	15

COURSES IN SOCIOLOGY

Sociology 211-2-3 are prerequisites for all other Sociology courses.

211-2-3. *Introduction to Sociology.* (9) This series of courses is focused upon the relationship of people to their physical and cultural surroundings and to each other. A systematic conceptual framework developed that will permit the student to view the social world and its major problems in terms other than common sense.

221. *Anthropology.* (3) Studies man's social origin with emphasis on the development of races and languages; the origin, nature and diffusion of cultures; and a comparison of the principle cultures of the world.

301. *Labor Problems.* (3) Problems of employment and labor from the standpoint of the employee, the employer, and the socio-cultural environment.

303. *Introduction to Field Study.* (3) A study of the theory and methods of social research including the structure and use of questionnaire, the schedule, the interview case histories, sociograms, sampling, etc.

322. *The Family.* (3) Principles and problems associated with the organization, disorganization and reorganization of the family in the American and other societies.

323. *Problems of Courtship and Marriage.* (3) A critical approach to problems of courtship, marriage and the family, with emphasis on marital roles and adjustments; biological and economic problems; women and the family; child-parent relationships; war and the family.

332. *Social Pathology.* (3) An analysis of the various aspects of personal and social disorganization as they are expressed, not only through abnormal activities, but also through socially approved cultural patterns. Analysis made in terms of a consistent framework, the central notion of which stresses the unitary nature of the process through which both the normal and abnormal come into being.

351. *Introduction to Social Psychology.* (3) A study of the biological and social basis of human behavior with emphasis on the development of personality and an analysis of the general social setting in which personality development occurs.

393. *Racial and Cultural Relations.* (3) An examination of the problems, relationships and adjustments of racial, cultural and ethnic minorities. Emphasis on the nature of these phenomena as they occur in the American social setting.

412. *Criminology.* (3) Includes an examination of the problems of crime and criminals; the making of the criminal; the theories of crime and punishment; machinery employed in dealing with the criminal; penal and correctional institutions and programs of correction. Case studies and visits to institutions serve as aids in enriching understanding.

421. *Population Problems.* (3) Theories and trends in population growth in conjunction with the political and economic implication of these trends at regional, national, and international levels.

442-3. *Rural Sociology.* (6) The structure of dynamics of rural life, together with a consideration of the technological and social changes in the rural community.

450. *Senior Project Writing.* (3)

451. *Juvenile Delinquency.* (3) Covers the major causes and problems involved in anti-social acts of children. A study of the methods used in prevention of delinquencies and treatment of the juvenile including probational and institutional care.

452-3. *Sociology of Child Development.* (6) A study of the development of the child with emphasis upon a distinct sociological approach to behavior in relation to the family, play groups, school situations, the community and larger social institutions. Designed to acquaint prospective teachers and majors in sociology with the influences of social institutions upon the child's total development. Admission only with the approval of the instructor.

461. *Urban Sociology.* (3) A study of the growth of urbanism, its spatial and communicative extension into rural areas, and its impact upon the economy, the values and the social organization of communities. The spatial structure and land use patterns of urban and fringe areas and their implications for social service and police administration analyzed.

462. *Social Institutions.* (3) Concerned with the theories relating to the development of the major social institutions, their values and changes in satisfying the basic needs of man.

471. *Methods of Teaching Social Studies in High Schools.* (3) Designed to acquaint the prospective teacher with the most recent trends in the teaching of the social studies in regard to objectives the selection and organization of curricular materials; the selection and utilization of equipment and resources; methods of teaching; and appraisal of the results of teaching.

472. *Advanced Social Psychology.* (3) An examination of the major points of view in social psychology including those of Mead, Dewey, and Cooley; Gestalt Psychology, Behaviorism and Psychoanalysis. Prerequisite: Sociology 453 and consent of instructor.

482. *Collective Behavior.* (3) Treatment of a wide variety of collective groupings and movements; their origin, organization, membership, leadership, and dissolution. Includes an analysis of such social phenomena as institutions, formalized and congenial groupings, audiences, publics, crowds, mobs, fads and fashions and mass movements such as social unrest and reform.

491-2. *History of Sociological Theory*. (3) Major sociological theories as represented by Comte, Spencer, Durkheim, Weber, Simmel, *et al.*, including those of the contemporary period.

DEPARTMENT OF SPEECH AND DRAMA

THOMAS E. POAG, Ph.D., *Head*

Speech

The departmental program in Speech and Drama is divided into two areas of concentration: (1) Speech and Drama and (2) Speech Correction. Courses in Radio and Television are offered as electives. Students are free to major or to minor in the two areas. The purposes of the department are to train teachers in areas of Speech and Drama for public schools, colleges, and universities; to train technicians for the educational, community, and professional theatre, and for radio and television. The department offers service courses for non-majors who are interested in speech improvement, and dramatics as a cultural or a leisure-time activity.

Curricula in Speech and Drama meet the requirements of the State Department of Education for teaching certificates and the needs of graduate students. Forty-eight hours of courses in Speech, Drama, and related subjects or a combination of Speech and Drama courses are required for a major; and 18-27 hours for a minor. A minimum of 192 quarter hours are required for graduation.

A major in the department of Speech and Drama for the Bachelor of Arts degree must complete 48 hours of course work in the areas of Speech or Drama and 66 hours in the General Education core plus 18-27 hours in Modern Foreign Languages if he plans to teach. All Speech and Drama majors are encouraged to minor in Education—36 hours; and English, 36 hours.

A major in the department of Speech and Drama for the Bachelor of Science degree must complete 48 hours or more of course work in the areas of Speech or Drama, plus 60 to 66 hours in the General Education Core; 36 hours in Education; and 41 hours in other specified courses and electives. All majors for this degree are encouraged to minor in English, 36 hours.

Majors must complete 66 hours of courses on the 300 and 400 levels for graduation.

Students concentrating in Speech Correction are required to complete 30 hours or more in Speech, six hours in Psychology; 36 hours in Education; and 12 hours in drama courses, plus the other requirements for the Bachelor of Science degree.

BACHELOR OF SCIENCE DEGREE

Curriculum in Speech Correction

Freshman Year				Sophomore Year			
Quarter		Hours Credit		Quarter		Hours Credit	
Name of Course	I	II	III	Name of Course	I	II	III
Speech 101-2-3	1	1	1	Social Studies 114	3		
English 101-2-3	3	3	3	Speech 201-2-3	3	3	3
Art 133	3			Speech 211-12-13	3	3	3
Health 212	3			Math. 111-12-13 or 200	3	3	3
Health 151			3	English 211-12-13	3	3	3
Speech 223		3		Education 201		3	
Music 131		3		Psychology 242			3
S. Studies 111-12-13	3	3	3	Air Sci. 251-52-53 (M)	1	1	1
Biology 101-2-3	4	4	4	P. E. 20's - 50's	1	1	1
Air Sci. 151-52-53 (M)	1	1	1				
P. E. 11-12-13	1	1	1				
Electives			3				
Men	18	18	18	Men	17	17	17
Women	17	17	17	Women	16	16	16

Junior Year				Senior Year			
Quarter		Hours Credit		Quarter		Hours Credit	
Name of Course	I	II	III	Name of Course	I	II	III
Speech 321-22-23	3	3	3	Speech 301-2	3	3	
Speech 381-82-83	3	3	3	English 301	3		
Education 371-485-486	3	3	3	Speech 450		3	
Speech 451-351	3	3		Speech 481-82-83	3	3	3
Psychology 312			3	Electives	3	6	6
Philosophy 323			3	Education 472			9
Psychology 463		3		Education 471	3		
Education 462		3		Psychology	3		
Psychology 243	3						
Education 301, 387	3		3				
	18	18	18		18	15	15

BACHELOR OF ARTS DEGREE

Curriculum in Speech and Drama

Freshman Year				Sophomore Year			
Quarter		Hours Credit		Quarter		Hours Credit	
Name of Course	I	II	III	Name of Course	I	II	III
Art 133	3			Education 201	3		
Music 131		3		Social Studies 114	3		
Health 151			3	Speech 201-2		3	3
Speech 111-12-13	1	1	1	Mod. Foreign Lang.	3	3	3
English 101-2-3	3	3	3	English 211-12-13	3	3	3
French, Spanish or				History 201-2-3	3	3	3
German 101-2-3	3	3	3	Psychology 242-43		3	3
Soc. Studies 111-12-13	3	3	3	Air Science (M)			
Biology 101-2-3	4	4	4	251-252-253	1	1	1
Air Science (M)				Phys. Ed. 20's to 50's	1	1	1
151-152-153	1	1	1				
Phys. Ed. 11-12-13	1	1	1				
Men	19	19	19	Men	17	17	17
Women	18	18	18	Women	16	16	16

Junior Year				Senior Year			
Quarter		Hours Credit		Quarter		Hours Credit	
Name of Course	I	II	III	Name of Course	I	II	III
Speech 203			3	Education 371	3		
Speech 341-212	3	3		Philosophy 323			3
Speech 301-2-3	3	3	3	Speech 411-12	3	3	
Math. 111-12-13 or 200	3	3	3	Speech 421-22-23	3	3	3
Education 301-387	3	3		Speech 450	3		
Psychology 312			3	Speech 471		3	
English	3	3	3	Health 212	3		
Education 342-362	3	3		English		3	
Psychology 463			3	Education 472			9
Modern Foreign Lang.				Education 462	3		
(If required)				Electives		3	
	18	18	18		18	15	15

BACHELOR OF SCIENCE DEGREE

Curriculum in Speech and Drama

Freshman Year				Sophomore Year			
Quarter				Quarter			
Name of Course	I	II	III	Name of Course	I	II	III
Speech 111-12-13	1	1	1	Speech 201-2	3	3	
Art 133	3			Social Studies 114			3
Health 151			3	Speech 211-12-13	3	3	3
English 101-2-3	3	3	3	Speech 231-32-33	2	2	2
Soc. Studies 111-12-13	3	3	3	Math. 111-12-13 or 200	3	3	3
Biology 101-2-3	4	4	4	English 211-12-13	3	3	3
Phys. Ed. 11-12-13	1	1	1	Education 201	3		
Air Science (M)				Psychology 242-43		3	3
151-152-153	1	1	1	Phys. Ed. 20's to 50's	1	1	1
History 201-2-3	3	3	3	Air Science (M)			
Electives		3		251-252-253	1	1	1
Women	18	18	18	Women	18	18	18
Men	19	19	19	Men	19	19	19

Junior Year				Senior Year			
Quarter				Quarter			
Name of Course	I	II	III	Name of Course	I	II	III
Speech 301-2-3	3	3	3	Speech 450	3		
Speech 421-22-23	3	3	3	Speech 381	3		
Education 301-387	3	3		Speech 411	3		
Psychology 312			3	Speech 461			3
Speech 341-42	3	3		English		6	3
Philosophy 323			3	Education 472			9
Speech 203	3			Health 212		3	
Education 462		3		History 203	3		
Psychology 463			3	Speech 311		3	
Education 371	3	3	3	Speech 471 (Ed. 471)	3		
	18	18	18		15	12	15

Courses in Speech

101-2-3. *Speech Composition*. (1) A study of the basic principles used in the writing of various types of speeches. Attention also given to voice and diction. One credit hour each quarter.

201. *Fundamentals of Speech*. (3) A study of the fundamental theory and practice of voice usage as related to effective speech.

202. *Public Speaking*. (3) The practice of speech composition and delivery will be stressed. The student will have practice in preparing and presenting short, informative, entertaining and persuasive speeches. The method in which the student is trained is applicable to social and business conversation as well as to public speaking.

203. *Argumentation and Debating*. (3) The principles and practices of argumentation, an analysis of propositions, evidence, brief making, and preparation and delivery of forensics, as well as participation in classroom discussions. Techniques governing round table, forum and panel discussions will be studied.

212. *Phonetics*. (3) An introduction to the study of phonetics, the symbolization of speech sounds, kinesologic phonetics, American speech style, and applied phonetics.

213. *Speech Correction*. (3) Especially designed to meet the needs of the teacher of speech in public schools and colleges. This course will deal with actual clinical processes in the theory and practice of speech correction and training of visual hearing. Prerequisite: Speech 201.

221. *Business and Professional Speech*. (3) Designed purposely for the student with neither a major nor minor in the field of speech. Emphasis is placed on the following speech situations; business interviews, conference, reports, and similar types of business conversations. In addition, the student's individual speech is analysed and checked.

223. *Choral Speaking*. (3) Oral group interpretation of verse. Affords an opportunity for intensified and vital artistic expression through the formation of a speaking choir. Values for both elementary and adult groups. Methods of conducting groups and selection of materials will be considered. (Class limited to 25).

321. *Lip Reading*. (3) Positions and movements involved in English Speech and the current methods used in teaching Lip Reading.

322. *Stuttering*. (3) A study of the diagnosogenic, psychogenic, and organic etiologies of stuttering. Techniques for the diagnosis, management, and therapy for primary and secondary stutters. A review of the significant research in the field of stuttering, with emphasis on etiologies and therapies. Clinical observation required. Prerequisite: Speech 213, or an introductory course in Speech Correction.

323. *Psychology of Speech*. (3) Basic factors in persuasion, technique of persuasion attention, suggestion, motivation, the audience, semantic and interview.

361. *Parliamentary Procedure*. (3) A study of the laws and techniques of parliamentary practices.

381. *Voice Science*. (3) Consideration of aspects of the phonetic, anatomic, physiologic, and physical bases of speech. (Laboratory practice.)

382. *Anatomy and Physiology of the Vocal Mechanism*. (3) Respiration, articulation, resonant, and phonation. Practice application to speech improvement.

383. *Hearing Disorders*. (3) Physiology and anatomy of auditory mechanism, symptomatology and pathology of hearing disorders, their surgical treatment, clinical and classroom management.

450. *Senior Project*. (3)

451. *History of English Language*. (3) Same as English 451. Prerequisite: Speech 201.

452. *Advanced Public Speaking*. (3) A study of the standards of criticism and techniques involved in effective public address.

471. *Methods of Teaching High School Speech*. (3) Spring. A methods course in the teaching of speech and drama on the secondary level.

461. *Public Address I*. (3) A study of Speech making from ancient time through the Renaissance and includes attention to the development of rhetorical theory.

462. *Public Address II*. (3) A study of speech making from the Renaissance to the modern times and includes attention to the development of rhetorical theory.

463. *Advanced Public Discussions*. (3) A study of types of discussions.

481. *Audiometry and Hearing Aids*. (3) Theory and practice of clinical and group audiometry; screening and diagnostic techniques, pure tone and speech audiometry. Characteristics of modern hearing aids; selection and usage problems.

482. *Language Disorders and Cerebral Palsy*. (3) Linguistic disorders, causes, and remedial training; types of cerebral palsy, causes and treatment of cerebral palsy speech.

483. *Clinical Methods and Practice in Speech Pathology*. Study of cases and practice in clinical diagnosis and remedial treatment.

Drama

111-12-13. *Theatre Practice*. (3) An introduction to theatre organization and practices.

211. *Elements of Acting*. (3) Study and practice in the fundamentals of acting technique. The importance of voice, posture, gesture, and movement in theatrical expressiveness. Scenes from the world's best dramas will be analyzed and used as criteria for the course.

231. *Introduction to Stage Design*. (2) A study of the fundamentals of design for the theatre.

232. *Stage Make-Up*. (2) A study of the fundamental principles of stage make-up.

233. *Color Psychology*. (2) A study of the basic principles of color in production.

301. *General Dramatics*. (3) Basic principles of stage design, casting, acting, techniques, preliminary script analysis, and the technique of producing plays. The student will be required to make a prompt book and to apply this technical knowledge to the productions of the year.

302. *Play Interpretation and Direction*. (3) The fundamental principles of directing are taught through exercises and projects. Each student will be required to direct a one-act play, and to attend rehearsals of the Tennessee State Players Guild. Study and practice in the methods by which the values of the written drama are translated to the stage in terms of acting, stage composition, grouping, movement, tempo, smoothness, and rhythm will be emphasized. Prerequisite: Speech 301.

303. *Playwriting*. (3) General principles and techniques of playwriting. Practical laboratory work dealing with a study of the plot, characterization, and dialogue necessary for creative production for stage, radio and screen will be stressed. The student will have an opportunity to stage his original plays in the workshop theatre. Prerequisite: Speech 302. Also open to junior and senior English majors.

311-12-13. *History of the Theatre*. (3) The Greeks, the Orient, Europe and America. The physical playhouse, methods of production, great actors, stage machinery, scenery, costumes and masks.

331. *Children's Theatre I*. (3) Creative dramatics. This course is concerned with the history of the Children's Theatre movement in the United States and Europe.

332. *Children's Theatre II*. (3) Organizing the children's theatre program. (grades 1-8)

333. *Children's Theatre III*. (3) Organizing the youth theatre program. (grades 9-12)

341. *Introduction to Drama*. (3) Same as English 341. Prerequisite: English 213.

343. *American Drama*. (3) Same as English 343. Prerequisite: English 213.

371. *Radio and Television Production*. (3) An introductory course dealing with the basic principles of formulating and producing the radio and television program.

372. *Radio and Television Acting*. (3) Methods and techniques involved in the presentation of radio and television plays.

373. *Radio and Television Writing*. (3) A study of the techniques and methods used in writing the radio and television script. The student will be required to write a number of scripts for various types of programs.

411. *Shakespeare*. (3) Same as English 411.

412. *Community Drama*. (3) The problems of the teacher, and community worker in the presentation of plays. Special emphasis will be placed upon directing and recreational activities in the rural and urban communities. General techniques in organizing and managing the Little Theatre and social centers, churches, and clubs will be stressed. The student will have an opportunity to make general equipment for the community theatre in the scenic workshop.

421. *Stage Design*. (3) The theory, technique and practice in designing stage scenery.

422. *Stagecraft*. (3) The theory, technique and practice in the making of various types of stage scenery.

423. *Stage Lighting*. (3) The theory, methods, and practice in stage lighting. Students will have practical problems in designing the lighting for various productions during the year.

431. *Costume Design*. (3) The history of stage costume from the ancient times to the present. Emphasis will also be given to the theory and practice in the designing and making of costumes for the stage.

COURSES IN PHILOSOPHY

Philosophy 323. *Introduction to Philosophy*. (3) Covers a consideration of the methods of philosophical problems arising from the physical, biological, and social sciences, and from art, morality, and religion.

Philosophy 301. *Biblical Literature*. (3) A consideration of the primary document of our religious heritage. Both the Old Testament and the New Testament will be considered without imposing any sectarian or particular point of view upon the student. Interest is placed on the discovery, through the literature of the Bible and intertestamental books of the Judeo-Christian tradition, of the development of the six basic concerns of religion.

SCHOOL OF EDUCATION

MALCOLM D. WILLIAMS, Dean

Faculty:

Division of Business

Department of Business Administration

E. J. Carpenter, Carl Crutchfield, Mildred K. Gaines, Vivian W. Henderson, Lewis R. Holland, Robert M. Holzmer, Alicia M. O'Reilly, Louis H. Schuster, and Cass F. L. Teague, and R. C. Brooks.

Department of Business Education

Augustus Bankhead, Mildred Cater, Cecille E. Crump, Mattie L. Gordon, Sadie Hunter, Mary L. Jackson, Essie L. Mott, Camille D. Robinson, and William D. Stinson.

Department of Administration, Curriculum and Instruction

H. S. Blanton, N. A. Crippens, Oliver W. Crump, Lois Daniel, Arthur E. Franklin, Ira Gentry, Earline Hudson, Mildred Hurley, Darlene Hutson, Bessie Kean, Raymond Kemp, Velma King, Charity Mance, J. L. Morris, Gretchen B. Payne, Joseph A. Payne, Tee Peacock, Ruth Marie Powell, Evelyn S. Quivers, Charles E. Rochelle, Nettie Seabrooks, Solomon Shannon, Jessie C. Smith, Helen N. Teague, Arthuryne J. Welch, Malcolm D. Williams, L. J. Willis, Roberta P. Wright, and Carnie C. Banning.

Department of Art and Music

Art

Hiram V. Gordon, Frances E. Thompson.

Music

Brenton B. Banks, Benjamin J. Butler, Eddie T. Goins, Frank T. Greer, Edward C. Lewis, Lloyd L. Lusk, Sara Phillips, John Sharpe, Edward Louis Smith, William O. Smith and Wilhelmena R. Taylor.

Department of Psychology

Amanda Atchison, Calvin O. Atchison, Ralph Butler, Montraville I. Claiborne, Grace C. Jones, Frederick J. D. McKinney, Harold L. Phelps, S. Oliver Roberts, Pauline M. James and J. J. Ray.

Department of Health, Physical Education and Recreation

Bernice L. Adkins, Lua S. Bartley, L. E. Burgess, Robert S. Cobb, J. C. Coffee, E. Perry Crump, Inez Crutchfield, Will Ann Davenport, Carrie M. Gentry, Howard Gentry, Howard Green, John A. Harvey, Thomas Hughes, Harold Hunter, Clyde J. Kincaide, Mabel S. King, Clyde M. Leathers, Audrey Lewis, Shannon Little, Peggy Williams, Richard A. Miller and Henry A. Taylor.

SCHOOL OF EDUCATION

MALCOLM D. WILLIAMS, Ed.D., *Dean*

Purposes of the School of Education

The basic concept for preparing teachers for service and life has been utilized as the foundation element for the development of the purposes of the School of Education, which are:

1. To prepare elementary and secondary teachers, supervisors, and administrators.
2. To provide opportunities for students to pursue research in the problems of education.
3. To assist graduates in finding teaching positions for which they are qualified and in advancing to better teaching positions after they have had teaching experience.
4. To provide students with opportunities for knowledge and understanding of the economic society in which they live and their relation and responsibility in such a society.
5. To provide a sound program of guidance and work cooperatively with the other departments and schools of the university in implementing the program.

ORGANIZATION

The School of Education is composed of one division, six departments, two curricula, and courses in Administration and Supervision, Library Science, Secondary Education, and Special Education. It is organized as follows: the Division of Business which consists of the Departments of Business Administration and Business Education; the Department of Administration, Curriculum and Instruction with a curriculum in Elementary Education and courses in Administration and Supervision, Library Science, Secondary Education, and Special Education; the Department of Art and Music with a curriculum in Music and courses in Art Education; the Department of Health and Physical Education; and the Department of Psychology.

The School of Education has cooperative agreements with the county schools of Davidson County and the city schools of Nashville, under which certain schools are made available for teacher preparing centers. Some departments have teacher preparing centers in Clarksville, Chattanooga, Knoxville, Lebanon, Memphis, Morristown, and Ripley, Tennessee.

Advisory System

Upon being admitted to the University, each student is assigned by the Registrar on a basis of the student's choice of school, to the Dean of that school who refers the student to the head of the major department for guidance.

The duties of the adviser are to assist the student in selecting his subjects so as to secure a well-rounded education, as well as to aid in interpreting the requirements in their proper sequence.

The responsibility for the selection of courses rests, in the final analysis, upon the student; and it is not the province of the adviser to refuse approval of the course which the student is entitled to elect. Similarly, it is the primary duty of the student to pursue courses in their proper order to meet the requirements for graduation in the senior year. When the student registers for each quarter, he is required to consult his adviser on all schedules to be pursued. The student is urged, further, to confer with his adviser frequently, at least monthly, during each quarter.

Major advisers are members of the staff of the department in which the student is doing his major work. Major advisers counsel students on curricular and life adjustment problems.

In an effort to provide a highly effective and efficient guidance program, use is made of the following techniques: conferences, interviews, rating scales, personality tests, senior standing blanks, and a cumulative folder for each student of the School of Education.

Teacher Placement

The School of Education does not maintain a separate placement bureau from that of the University. The School of Education cooperates with the University Placement Bureau in assisting its graduates to secure teaching and administrative positions.

Every graduating senior is required to register with the University Placement Bureau which is located in the Student Union. No service charge is made by the Bureau of students, employees, and alumni of the University.

Public Services

Throughout the year the School of Education receives many requests for services from local, county, and state agencies. In an effort to meet these requests, the following services are provided: (1) cooperation with the extension division to organize undergraduate class centers, (2) cooperation with the state in-service program in conducting short courses and summer work-conferences, (3) consultative services on local problems to school personnel throughout the state by university staff members, (4) development and distribution of materials to school personnel, and (5) cooperation with the State Department of Education in the administration of the State-wide Testing Program.

Curriculum Laboratory

The curriculum laboratory was organized at the University in the fall of 1952. The laboratory is located in Room 208 in the Education Building.

Functions of General Education

Much discussion has been held about the purpose, nature, content, and characteristics of General Education. The issues, which seem to be well defined, are centered around the characteristics of general education rather than around the content. General Education as conceived at the Tennessee Agricultural and Industrial State University is designed to develop in students those skills, understandings, attitudes, and values which will equip them for effective living and responsible citizenship in a democratic society.

The types of General Education envisioned by the University seek to provide students with an opportunity to become acquainted with broad areas of subject matter, to aid them in the discovery of their own interests and abilities, and to equip them to live more effectively with themselves and with others as citizens of a democracy.

In order that the students at the Tennessee Agricultural and Industrial State University might participate effectively in the benefits to be derived from a general education, the University has revised its curriculum to provide for its students a 60 quarter hour program, as minimum, to be taken from the General Education Core.

The general education courses may be taken from the following areas:

	Quarter Hours
Communication	9
Health, Physical Education, Personal Development, and Home and Family Living	9
Humanities	15
Natural Sciences	12
Social Studies	12
Fundamental Concepts of Mathematics	3 or 9

General Competencies Sought in General Education:

The prospective teacher should possess the ability to:

1. Improve and maintain his own health and assume his share of responsibility for protecting the health of others.
2. Communicate effectively through reading, writing, speaking, and listening.
3. Attain emotional and social adjustment through the enjoyment of a wide

range of social relationships and through the experience of working cooperatively with others.

4. Think logically, relatively, and imaginatively.
5. Discriminate among moral and spiritual values and apply these values in day-to-day relationships.
6. Accept the responsibilities and exercise the privileges of democratic citizenship.
7. Appreciate beauty as it appears in nature, in literature, in music, and in the graphic and practical arts; and find means of creative expression in the arts.
8. Study and learn.
9. Understand his natural environment and its relationship to human welfare.
10. Develop an awareness of the greatness of man and of the essential oneness of men of all ages, nations, races, and creeds.

GENERAL INFORMATION ON THE TEACHER EDUCATION PROGRAM

University Supervisory Committee of Teachers Education Objectives:

1. To help provide and perpetuate an institutional climate favorable to the healthy growth of a teacher education program.
2. To develop and administer teacher education policies which will offer reasonable assurance that only persons of professional promise are prepared and recommended for entry into the teaching profession.

The function of the Supervisory Committee of Teacher Education for Tennessee A. & I. State University is to develop policies, and ways for implementing them, relating to admission, retention, counseling, records, curricula, and standards for completion of program in teacher education and to recommend the policies and ways for implementing them to the Dean of the Faculty, the President of the University, and those involving the Graduate School to the Dean of the Graduate School.

The Committee is composed of nine members as follows: Graduate School—1, School of Agriculture and Home Economics—1, School of Arts and Sciences—3, School of Education—2, School of Engineering—1, and the Dean of the School of Education who shall serve as Chairman of the Committee and Director of Teacher Education. All other Deans and the President of the University are ex-officio members. The Chairman of the Committee is the Director of Teacher Education and serves as the University's chief agent for teacher education. He has the total responsibility for administering the teacher education policies approved by the Dean of the Faculty, President of the University, and the Dean of the Graduate School.

The Office of the Director of Teacher Education shall approve all students who apply for candidacy to the teacher education program and secure a record of each applicant showing that the applicant has met standards for candidacy to teacher education as required by the policies of the Supervisory Committee. The curriculum head of each teacher education curriculum will be informed of the students approved for the teacher education program in his curriculum by the Director of Teacher Education.

His Office shall get grade reports periodically on each approved student in the teacher education program. The heads of the several teacher education curricula shall inform the Director of Teacher Education through their respective deans of any students in their curricula who are not maintaining the teacher education program's retention standards. He will notify the students who are not meeting the retention requirements that they have one quarter in which to remove their deficiencies. Students who do not remove their deficiencies and meet the retention standards during the quarter of probation are subject to be dropped from the teacher education program.

TEACHER EDUCATION ADMISSION TO CANDIDACY AND RETENTION STANDARDS

Admission

1. Each student who desires to be a candidate for admission to the teacher education program will make application to the Director of Teacher Education the 3rd quarter of his sophomore year, after he has completed 80 hours of course work, including a minimum of 6 quarter hours of professional education—course 201 Foundations of Education and one other 200 level course.

2. With his application there should be attached reports showing that the student has

 Taken the sophomore test.

 A two point average at the end of the third quarter of sophomore year.

 Passed a speech or oral expression examination.

 A good character and personality rating.

 Absence of uncorrectable physical and emotional handicaps deemed by the Supervisory Committee as being of major importance.

Candidates for formal admission to the teacher education program who are not approved will not be permitted to take 300 and 400 level professional education courses until they are approved.

Retention

To remain in the teacher education program the student must:

1. Maintain University Scholarship standards in the courses in the areas of certification and professional education.

2. During the third quarter of the junior year (minimum of 128 quarter hours) candidates shall take the student edition of the National Teacher Examination. The candidate must show acceptable performance on the test before being admitted to student teaching.

3. Make application for student teaching through the teacher education curricula heads to the Director of Student Teaching the 3rd quarter of the junior year (minimum of 128 quarter hours). With the application should be attached reports showing that the student has

 Met all teacher education program requirements to date.

 Completed the prescribed pre-requisite professional education courses and $\frac{3}{4}$ of the prescribed courses in his major area of specialization.

 Participated in a September Laboratory school experience prior to the senior year.

 Passed a physical examination showing that he is free of any communicable diseases.

4. All students are required to carry a minimum of 9 quarter hours of student teaching.

THE SEPTEMBER FIELD EXPERIENCE

The prospective student teacher is expected to participate in the September Field Experience. *The September Field Experience* provides opportunities for the student to serve as an assistant staff member in a school of his choice near his home before the University's Fall quarter begins. This experience, which lasts for two or three weeks, helps the prospective teacher to find out what teaching is like. It often helps him to answer some personal questions about his career choice. In addition to providing beginning preparation for later participation experiences and for student teaching, it also helps students acquire background for their professional courses. In fact it is the strand of experience which often gives real meaning to other components of the program. Each student will be given guide sheets and assigned to a school. He is to return the guide sheet and his log book to the Director of Education after having had the September Field Experience.

DEPARTMENT OF ADMINISTRATION, CURRICULUM AND INSTRUCTION

CHARITY M. MANCE, Ph.D., Head

General Statement

The Department of Administration, Curriculum, and Instruction is designed primarily for the training of teachers. It consists of a curriculum in Elementary Education, offering the Bachelor of Science degree; and courses in Secondary Education, Library Science, and Special Education.

The program of teacher preparation, which leads to teacher certification in Tennessee, includes two broad areas of study: The General Education Program and the Professional Education Program.

The General Education Program, required of all departments in the School of Education, is described in the general introductory statement for the School of Education. The Professional Education program is presented below.

Professional Education

The basic pattern of professional education needed for teaching has certain common elements which apply to problems which all teachers face irrespective of the age level of the pupils who are under their supervision. In addition, preparation for teaching on the different educational levels and in various curriculum areas requires specialized training appropriate to the different areas.

The basic pattern of professional education, therefore, includes (1) core professional courses required of all persons seeking teacher certification and (2) specialized professional courses leading to certification in the different areas.

Core Professional Requirements for Certification

In planning the core professional program attention was given to those areas of study which are specifically mentioned by the State teacher certification authorities. These areas include:

1. Orientation to the teaching profession: Historical, Philosophical, and Sociological Foundations of American Education.
2. Human Growth and Development, including an understanding of how children grow physically, emotionally, socially, and mentally, the nurture necessary for wholesome growth, and the relation between growth and acquiring or learning new behavior patterns.
3. The Psychology of Learning as applied to learning activities under the guidance of the school.
4. Understanding of School Organization, Administration, and Management.
5. Techniques of Measurement and Evaluation.
6. Skill in Curriculum Development.
7. School and Community Relations.
8. Classroom Guidance.

The course offerings designed to meet the Tennessee State certification requirements for the core professional program are outlined below.

Professional Education Core Requirements

The following courses are required of all persons seeking Tennessee teacher certification.

- Ed. 201—Foundations of Education
- Ed. 301—School Organization, Administration, and Management
- Ed. 387—Curriculum Development
- Ed. 462—School and Community Relations
- Psy. 242—Educational Psychology I, Human Development
- Psy. 243—Educational Psychology II, Psychology of Learning
- Psy. 312—Measurement and Evaluation in Public Schools
- Psy. 463—Guidance For Classroom Teachers

Specialized Professional Education Requirements

The specialized professional education requirements vary according to the area or grades in which one seeks certification.

The specialized requirements, adapted to grades 1-9 or grades 7-12 include:

- (1) Materials and methods of teaching appropriate to the level of certification.
- (2) Supervised student teaching appropriate to an area of endorsement (at least 6 quarter hours).

These specialized requirements are outlined under the areas to which they apply.

Specialized Professional Education Requirements For Elementary Education Majors
(Grades 1-9)

- Ed. 321 —Teaching Arithmetic in the Elementary School.
- Ed. 322 —Teaching of Language Arts in the Elementary School.
- Ed. 323 —Teaching the Social Studies in the Elementary School.
- Ed. 333 —Seminar Workshop.
- Ed. 443 —Principles of Teaching in the Elementary School.
- Ed. 472e—Student Teaching in the Elementary School.

Specialized Professional Education Requirements For Certification on the Secondary Level
(Grades 7-12)

- Ed. 371 —General Methods and Classroom Management in the Secondary Schools.
- Ed. 471 —Methods Course in the Area of Endorsement.
- Ed. 472s—Student Teaching in the Area of Endorsement.

Adding Endorsement for Both Grades 1-9 and Grades 7-12

To add endorsement grades 7-12 to endorsement grades 1-9 the holder of a certificate with endorsements of grades 1-9 may qualify for endorsement in grades 7-12 by the completion of 15 quarter hours of credit, 9 of which are in the field of specialized professional education for grades 7-12, including at least 3 quarter hours in appropriate methods and by the meeting of requirements for endorsement in at least one area.

Adding endorsement grades 1-9 to endorsement grades 7-12, the holder of a certificate with endorsement of grades 7-12 may qualify for endorsement in grades 1-9 by completion of 18 quarter hours credit, 9 of which are in the field of specialized professional education grades 1-9, including at least 3 quarter hours of methods appropriate to grades 1-9 and 9 quarter hours in subject-matter areas as outlined for endorsement grades 1-9.

Curriculum in Elementary Education

Elementary education is one of the curricula in the Department of Administration, Curriculum, and Instruction set up by the University as its agency for the professional preparation of teachers in the field of elementary education. The Bachelor of Science degree is awarded upon the satisfactory completion of this curriculum. Those who complete this program are also qualified for State teacher certification in elementary education.

General Requirements for the Bachelor's Degree in Elementary Education

All candidates for the Bachelor of Science degree must complete a **minimum** of 195 quarter hours (with a minimum average of 2.0) which include:

The General Education courses (60 quarter hours)

A minimum of 60 quarter hours in 300 and 400 level courses

A minimum of 6 quarters of required physical education

A minimum of two years of basic Air Force Reserve Officers' Training Corps (men)

Nine quarter hours of English

Nine quarter hours of American history

The Junior English Proficiency Examination

A senior project

A major program of studies of 52 quarter hours which includes the following required courses in core and specialized elementary education:

Education 101, 201, 301, 321, 322, 323, 333, 387, 443, 462, 472e; Psychology 242, 243, 312, and 463.

A minor program of studies. This program should be in a subject area taught in the elementary school or in a service area such as special education or library service.

SUMMARY OF COURSES REQUIRED FOR ELEMENTARY EDUCATION MAJORS

Courses	Quarter Hours	Credit
1. General Education Program		60
Communications:	9	
English 101-2-3	9	
Health, Physical Education, and	9	
Personal Development or Home and Family Living		
Health 151, 211, 212, 301, 302,	6	
Nutrition 212		
Physical Education 11-12-13	3	
Humanities	15	
English (Literature) 211-12-261	9	
Music 131	3	
Art 133	3	
Natural Science	12	
Science 121-122-123 or Chemistry 111-112-113 or Physics 211-212-213 or Biology 101-102-103		
Social Studies	12	
History 121-122-123	9	
Sociology 211 or Political Science 221,	3	
or Economics 201		
Mathematics 103	3	3
2. Professional Education Program		51
A. Core Professional	24	
Education 201	3	
Education 301	3	
Education 387	3	
Education 462	3	
Psychology 242	3	
Psychology 243	3	
Psychology 312	3	
Psychology 463	3	
B. Specialized Professional	27	
Education 321	3	
Education 322	3	
Education 323	3	
Education 333	3	
Education 443	3	
Education 472e	12	
3. Area of Endorsement Program		
Language Arts	9	
Speech 201-202	6	
Library Service 211	3	
Natural Sciences	6	
Science 301-302	6	

Humanities	9	
Music 301-302	6	
Art 301	3	
Health, Physical Education, Personal Development, Home and Family Living	9	
Health 213	3	
Physical Education 243	3	
Physical Education 20, 50	3	
Social Studies	21	
Geography 171-172-173	9	
American History 201-202-203	9	
Tennessee History 341 or 342	3	
Mathematics	6	
Mathematics 111, 112	6	
4. Electives (Unrestricted)	24	
5. Total hours required for graduation	198	

Curriculum Sequence

The curriculum sequence for each year level is presented. Each student is required to secure the approval of his faculty adviser in the Department of Administration, Curriculum, and Instruction concerning his program of work. The faculty adviser will help the student prepare a program of study leading to certification as well as to graduation.

Recommended Course Sequence for the Elementary Education Curriculum

Freshman Year				Sophomore Year			
Quarter				Quarter			
Hours Credit				Hours Credit			
Name of Course	I	II	III	Name of Course	I	II	III
English 101-2-3	3	3	3	English 211-12-261	3	3	3
Geography 171-2-3	3	3	3	Science 121-122-123	4	4	4
History 121-2-3	3	3	3	Health (151, 211, 212, 301, 302, Nutrition 212)	3		
Mathematics 111, 112	3	3	3	Health 213		3	
Art 133	3			Mathematics 103			3
Music 131		3		History 201-2-3	3	3	3
Health (151, 211, 212, 301, 302, Nutrition 212)			3	Education 201	3		
Library Service 211	3			Psychology 242-243		3	3
Orientation	1			P. E. 20, 50	1	1	1
P. E. 11-12-13	1	1	1	Air Science (M)	1	1	1
Air Science (M)	1	1	1				
Women	17	16	16	Women	17	17	17
Men	18	17	17	Men	18	18	18
Junior Year				Senior Year			
Quarter				Quarter			
Hours Credit				Hours Credit			
Name of Course	I	II	III	Name of Course	I	II	III
Music 301-302	3	3		Education 472e	12		
Art 310			3	Education 443	3		
Education 321-322-323	3	3	3	Education 473		3	
Science 301-302	3	3		Education 462		3	
Education 301			3	Education 465			3
Education 333-387	3	3		Education 450			3
Psychology 312			3	Electives		9	9
Speech 201-202	3	3					
P. E. 243			3				
History 341 or 342	3						
Electives		3	3				
	18	18	18		15	15	15

Description of Courses in Education

101. *Orientation.* (1) A course required of all freshmen registered in Elementary Education; designed to orient the student into the entire field of Elementary Education and to the life of the University.

321. *Teaching Arithmetic in the Elementary School.* (3) An analysis of current methods in teaching arithmetic through first-hand experiences, the place of number meaning, thinking and drill in effective learning.

322. *Teaching of Language Arts in the Elementary School.* (3) A consideration of modern trends in teaching the language arts; using as tools of communication reading, spelling, literature, composition, and writing. The course also deals with the adequate training in both the subject matter and methods of teaching the language arts subjects.

323. *Teaching The Social Studies in the Elementary School.* (3) Includes a study of the objectives, scope, organization, and techniques of teaching on the elementary school level.

332. *History of Education in the United States.* (3) A survey course of the evolution of public education in the United States. (Must be taken on the Junior or Senior level).

333. *Seminar Workshop.* (3) This course is designed to help prospective teachers plan, organize, and execute the type of work they are expected to do during the practice period; making charts, graphs, friezes with emphases on the actual construction of curriculum material together with analysis of methods involved. (Must be taken on the Junior or Senior level).

341. *Principles and Organization of Secondary Education.* A study of the evaluation of the present American high school, types of organization, and problems relating to the high school pupil and curricula offerings.

363. *Activities in the School Program.* (3) The basic principles and procedures involved in guidance programs which meet the educational, social, vocational needs of the elementary and high school pupils. Special attempts are made to show the place of the assembly programs, student civic organizations, clubs and athletics in the total growth and development of the student population, both individually and in group activities. (Must be taken on the Junior or Senior level).

371. *General Methods and Class Management in the Secondary Schools.* (3) Classroom management, unit and lesson planning, direction of the various learning activities, selection and use of instructional materials and evaluation of the teacher-learning process. Prerequisite for student teaching. Prerequisite: Psych. 242, 243.

387. *Curriculum Development.* (3) A critical study of the reorganization, construction, and administration of the school curriculum in the light of modern educational principles and objectives. Prerequisites: Education, 201, Psychology 242, 243.

414. *Principles of Teaching.* (3) The formulation of basic principles of teaching and a study of how these principles are applied in the classroom. This course is taken concurrently with student teaching.

443. *Principles of Teaching in the Elementary School.* (3) An advanced course in methods and materials in the elementary school, designed for students who have had the equivalent of Education 321-2-3, 333, Psychology, 242-43. Must be taken along with Education 472e, Student Teaching. (Senior level only).

444. *Problems in Teaching.* (3) A critical viewing of some specific problems in Elementary teaching with emphases on methods and content, as determined by the maturity and intent of individual students. (Must be taken on the Senior level).

450. *Senior Project Writing.* (3) Designed to give opportunity for students to work individually on any problem of their choice in the area of elementary education. If a student has completed 60 hours of 300 and 400 level courses this course may be taken without credit. (Must be taken on the Senior level.)

462. *School and Community Relations.* (3) Designed to alert the student to the relationship of school and community in building citizens (1) by developing in the student increased awareness of the local community and its role on the national and international scene, (2) by creating in the student greater sensitivity and insight into social processes and problems, (3) by reviewing the rights, privileges, responsibilities and duties of mature citizens, and (4) by exploring techniques aimed at effective use of community and community resources to provide life experiences for developing citizens.

471. *Special Materials and Methods in the Certified Area.* (3) Each University department preparing the prospective secondary school teacher offers a course designed to familiarize students with teaching techniques and information of special interest to the particular subject-matter area. Generally, it is best to schedule this course during the quarter preceding Education 472. An example of departmental offering is History 471, Teaching History in Secondary Schools, etc. Students should consult their departmental offerings for the appropriate course to be scheduled.

*472e. *Student Teaching in the Elementary School* (12 quarter hours credit). Fall, winter, spring quarter. This course consists of directed observation, participation, and teaching in the elementary grades. It provides opportunities for students to work in typical school situations under the guidance of experienced teachers. Parallel readings and conferences for further interpreting and enriching these experiences are held regularly. This course is open only to seniors and teachers with some experience. Education 443 must be taken along with student teaching. Pre-requisites: Education 201, 301, 321-2-3, 333, 387; Psychology 242, 243, 312; Art 310; Music 301; P. E. 243.

*472s. *Student Teaching in the Secondary Schools, Grades 7 through 12.* (6 to 12 quarter hours credit). Actual classroom experience in secondary schools under the charge of expert teachers in nearby cooperating schools. Student teacher schedules should be arranged well in advance of the senior year and planned so as to enable the student to devote a half day to student teaching during the quarter in which the course is to be completed. Required for all students who are following the professional education core that leads to teaching as a career. Prerequisites: Ed. 201, Psy. 242-243, Ed. 301, Psy. 312, Ed. 387, Ed. 371, and Specific Methods.

473. *Audio-Visual Aids in Education.* (3) A survey course designed to acquaint the student with audio-visual materials of instruction. Proper classroom utilization of film strips, 16mm motion pictures, slides, graphic materials, field trips, exhibits and models is studied.

481. *Early Childhood Education.* (3) The course seeks to provide experience and understandings for the student who is interested in becoming a kindergarten and/or primary teacher. Also interprets the mechanics of desirable educational conditions, programs, and practices for these levels.

* General Requirements for Student Teaching

472e and 472s

All students desiring to enroll in student teaching (472e or 472s) must meet the following general requirements:

1. File application for student teaching one quarter prior to the one in which he wishes to enroll in student teaching.
2. Must be classified as a senior (144 or more quarter hours).
3. Have a scholastic average of at least 2.0 in professional courses and major subject.
4. Meet all course prerequisites.
5. Receive certification from health authorities that no serious physical condition detrimental to the welfare of the children exists.
6. Show evidence of emotional stability.

7. Obtain certification from his major department as to readiness to engage in student teaching, and to be accepted for placement as a student teacher by the cooperating school system.
8. Carry a maximum class load of 15 quarter hours credit while enrolled in student teaching.

SPECIAL EDUCATION

The education for teachers of exceptional children satisfies one of the great needs of our present day society, in that it provides for adequate training and experiences which will enable the prospective teacher to understand and guide the exceptional child adequately. Every child must have equal educational opportunities to develop to his maximum potentialities. The exceptional child is no exception, but needs special educational services in accordance to his peculiar needs and abilities. According to recent statistical reports there is an increasing demand for well qualified teachers in all areas of exceptionality, and most especially the area of the educable mentally retarded. The School of Education, Tennessee A. and I. State University, in accordance with its ideals and purposes, has expanded its teacher education offerings to include a program in the area of mental retardation.

Students who pursue the course in special education will be able to meet the requirements for State certification for teaching the educable mentally retarded. Each prospective teacher qualifying for a certificate should have completed requirements for a degree in either elementary or secondary education (endorsement grades 1-12). Those who have certificates on the secondary level must also hold an elementary certificate. Specialized courses for certification are taken at the undergraduate level.

COURSES FOR CERTIFICATION

Specialized Courses—

Sp. Ed. 465	Introduction to Special Education.....	3 hrs.
Sp. Ed. 467	Characteristics and Needs of the Mentally Retarded	3 hrs.
Sp. Ed. 469	Vocational Guidance of the Mentally Retarded....	3 hrs.
Sp. Ed. 471	Methods and Materials for Teaching the Mentally Retarded	3 hrs.
Sp. Ed. 473	Observation, Participation, and Teaching Mentally Retarded	3 hrs.

Related Courses (6 hours of Electives)

Psy. 323	Mental Hygiene	3 hrs.
Soc. 452	Sociology of Child Development.....	3 hrs.
Psy. 461	Psychometrics (Required).....	3 hrs.
Sp. Ed. 489	The Gifted Child	3 hrs.

(The prospective teacher must have completed at least 3 hours of teaching the normal child; this is included in the requirements for the elementary certificate.)

COURSES IN SPECIAL EDUCATION

465. *Introduction to Special Education.* (3) Designed to acquaint the student with the general field of special education—its purpose and scope. The course is a prerequisite to all courses either graduate or undergraduate. Offered each quarter.

467. *Characteristics and Needs of the Mentally Retarded.* (3) A critical study of the classifications, etiology and specific characteristics of the various types of children with low intelligence. Prerequisite: Sp. Ed. 465.

469. *Vocational Guidance and Placement of the Mentally Retarded.* (3) Designed to acquaint the student with the duties and responsibilities of a rehabilitation counselor of a client who has a disability of mental retardation. Prerequisite: Sp. Ed. 465 or 467.

471. *Methods and Materials for Teaching the Mentally Retarded Child.* (3) Designed to acquaint the students with the principles underlying the methods and materials for teaching the children with low intelligence. Prerequisite: Sp. Ed. 465, 467 or 567.

473. *Observation, Participation and Teaching the Mentally Retarded.* (3) A practicum in actual classroom situations, guiding the learning experiences of the mentally retarded child. Frequent conferences and reference readings will aid in the interpretation and solution of existing problems, as well as improving teacher-learning situations. Students must have completed the sequence of courses listed in the specialized area.

489. *The Gifted Child.* (3) A general study of the gifted child's nature and development problems, curriculum needs and methods of teaching.

LIBRARY SERVICE

The Library Service program may be elected as a minor field of concentration by students taking a major in any department of the institution. In general the student begins his library training at the junior level. However, upon approval of his major advisor and in collaboration with the head of Library Service, he may be permitted to take no more than two courses at the advanced sophomore level. During his junior and senior years he can complete requirements by taking one or two courses in each term.

Students who elect library service for purpose of certification shall meet all requirements for endorsement as a teacher in grades one through nine or seven through twelve, and in addition, shall complete either eighteen quarter hours (six courses) for endorsement as a teacher-librarian or twenty-seven quarter hours (nine courses) for endorsement as a school librarian. No delineation is made between the training program for elementary school librarians and secondary school librarians since the basic knowledge and skills are comparable for work on either grade level. In-service teachers, administrators, and prospective teachers may elect materials courses related to their teaching needs. Students who plan to enter library schools after graduation are given guidance in planning their programs so as to meet minimum admission requirements.

The library service curriculum provides training for the following groups: (I) students who wish to prepare for library positions in elementary and secondary schools; (II) students who plan to enter a graduate library school after receiving the bachelor degree; (III) in-service teachers, administrators, and prospective teachers who desire information on library materials related to their teaching needs; (IV) students who wish guidance in the use of library resources.

Group I—Requirements

Students who elect library service as a minor shall complete first the following basic courses required for certification as a teacher-librarian: Library Service 361, 362, 363, 441, 451 and 452. For certification as a school librarian he must complete the following additional courses: Library Service 341, 463 and 483. It is recommended that Library Service 211—Use of Library Resources, be taken during the freshman or first two quarters of the sophomore year. Other desirable courses include Office Administration 211—Typewriting; English 261—Children's Literature; and the required sophomore psychology courses.

Group II—Requirements

Students preparing to enter a graduate library school for further training should complete all courses offered in the department. In addition they should acquire at least a reading knowledge of two modern foreign languages, preferably French and German. Language requirements vary in graduate library schools. Some schools require two years of college credit in the designated languages, while others may waive such requirements altogether, depending upon the kind of library work the student chooses for specialization.

Group III—Requirements

In-service teachers, administrators, and prospective teachers may enroll in library service courses even though they do not plan to complete a minor. It is recommended that they take courses dealing with materials.

Group IV—Requirements

Students seeking guidance in the use of library resources should elect Library Service 211 as early as possible in their first two years of academic training.

COURSES IN LIBRARY SERVICE

Undergraduate

211. *Use of Library Resources.* (3) A general course on the use of library facilities including the card catalog, periodical indexes, bibliographies, encyclopedias and other reference tools. Designed primarily to aid students in developing a systematic approach to using library materials. Students from any department may elect this course which is not included in courses required for certification. Three lectures.

341. *Introduction to Librarianship.* (3) Planned for the orientation of students in the broad field of library service. Includes an introduction to the development and function of libraries, types of services, types of library work and opportunities in librarianship. Field trips will be made in the city to libraries, bookstores, publishing houses and book binderies. Three lectures.

361. *Reference Materials.* (3) Embraces a study of basic reference books and other reference materials particularly for the school library or small library. Also includes the organization and administration of reference services. Three lectures.

362. *Books and Related Materials for Young People.* (3) Principles of selection, aids for selection, evaluation and use of books and related materials for young people. Emphasizes reading of books and an examination of materials for curricular needs, reading interests and personal growth of adolescent students. Attention also given to development of promotional activities aimed at stimulating use of materials by students and teachers. Three lectures.

363. *Books and Related Materials for Children.* (3) Principles of selection, aids for selection, evaluation and use of books and related materials for children. Emphasis placed on required readings for acquainting students with children's books and writers in the field. Attention given to an examination of materials for curricular needs, reading interests, and personal growth, and to the development of promotional activities aimed at stimulating use of materials by students and teachers. Three lectures.

441. *Classification and Cataloging.* (3) Introduction to principles underlying the classification and simplified techniques of cataloging books. The abridged Dewey Decimal Classification scheme used and printed cards stressed. Making of unit cards, filing, and other essential procedures of organizing the book collection are included. Three lectures and one laboratory period.

451. *Organizing Library Materials.* (3) The organization of non-book materials including periodicals, vertical file and audio-visual materials such as filmstrips, films and recordings. Attention also given to weeding, inventory and care of books, and other procedures involved in developing a systematic program of acquisition, upkeep and use of library materials. Prerequisite 441. Three lectures.

452. *School Library Administration.* (3) Principles, objectives and procedures involved in administering the small library. Standards and evaluation, housing and equipment, personnel, financial support, budgeting, loan systems, reports and other administrative procedures included. Three lectures and one laboratory period.

463. *Books and Related Materials for Adults.* (3) Special attention given to reading interests of adults, principles of selection, evaluation, and use of books and related materials for adults. Development of reading lists based on adult interests and activities such as book reviews, forums and book discussions included. Three lectures.

483. *Non-book Materials.* (3) Emphasis on selection, aids for selection, evaluation and use of non-book materials in the library program in relation to the entire school program. Problems involved in developing the library as a materials center that is responsible for films, filmstrips, recordings and other non-book materials is included. Three lectures.

THE DEPARTMENT OF ART AND MUSIC EDUCATION

EDWARD C. LEWIS, JR., Ph.D., *Head*

General Statement

The department of Art and Music Education is organized to serve the State's art and music education structure through teacher education, leadership, and statewide cooperation; to provide sound guidance and thorough training for the gifted student whose career goal is professional music; and to enable students interested in art to continue art study and to meet the requirements for teaching art in the schools of the state; and to bring the gifts of art and music in exhibits, lecture demonstrations, concert offerings and participation opportunities to all its people, as its contribution to the cultural enrichment of the campus, the community, and the state families.

The courses are designed to provide experiences leading to general culture, a mastery of fundamental tools, adequate performance ability, and the science and art of teaching. A curriculum in music education and courses in art education are offered to prepare the student in that area of teaching for which he is best suited.

The undergraduate program in Music leads to the bachelor of science degree in Music Education. The minimum number of quarter hours required for the bachelor of science degree in Music Education is 200. The minimum number of quarter hours in Music required is 110. The minimum of quarter hours in 300 and 400 level courses required for both the major in music education and for graduation is 47.

MUSIC EDUCATION

Method of Instruction

Courses in applied music are taught by means of private lessons. Beginning instruction in voice, piano, and in the string and wind instruments is offered in the group instruction method. Academic classes are taught by means of the lecture and project system with laboratory sessions as required or desirable. Upon entry and at the end of each academic year the student's accomplishment level or potential is evaluated by a jury of staff members and he is assigned to a teacher for private or class instruction. Progress is determined through examination by a jury and is based upon the student's native talent, technical advancement, and repertoire. All courses in music, whether applied or academic, must be passed with a grade of "C" or above. Each student will be expected to repeat courses in which a grade of "D" or below is earned until the grade of "C" or above is achieved. All music majors must take Comprehensive examinations in music theory, music history, music education, and applied music prior to practice teaching or during the final quarter of matriculation at the University. The time and place of these examinations will be announced periodically.

Applied Music

Applied music is defined as instruction and preparation in voice and the various instruments. Courses are offered in voice, piano, organ, violin, viola, violincello, string, bass, flute, oboe, clarinet, bassoon, saxophone, French horn, cornet (trumpet), trombone, tuba, and the percussion instruments. Each student must declare a major applied area of performance and must concentrate in this area for the equivalent of four years, and must present a senior recital during the senior year. It is expected that each student will make numerous appearances on seminars and student recitals during the freshman, sophomore, and junior years. For all students majoring in some instrument other than piano, it is expected that piano will be the minor performance area. In most instances the choice of the major applied area and curriculum will be governed by the proficiency that the student has achieved prior to entering the University.

For those new students who demonstrate talent but are lacking in formal training, the department offers courses in theory and applied music for no credit, and these courses must be pursued until credit level of proficiency is attained. All students enrolled in theory or applied courses for no credit are probationary students and may be advised to change to another academic curriculum.

Ensemble

Membership in music ensemble groups is open to all students of the University who qualify for admission and participation. Each music major is required to participate in a major ensemble group for the entire four years of his matriculation. Membership is not limited to one ensemble, but instrumental majors must participate in University Band and Vocal majors must participate in University Choirs. One credit per quarter is offered for each group.

The following ensembles are offered:

University Choir, University Band, Meistersingers, and String Ensemble. These groups are organized to study and perform the standard repertoire for the various combinations of voice or instrument.

Concerts and Recitals

Organized music groups, small ensemble groups, faculty and student soloists offer concerts and recitals frequently in the University auditorium. These are open to the public without charge, and students are particularly encouraged to attend.

Lyceum Series

Each year the University Lyceum Series sponsors an Artist Course, bringing to the campus and the community artists and ensembles of national prominence. This series along with the Faculty series provides a full and diversified musical calendar.

Teacher Education

The essential orientation of the curriculum in music is that of the teacher education program. Opportunities for professional development and for artistic preparation are amply provided for within the general pedagogical framework.

CURRICULUM IN MUSIC EDUCATION

EDWARD C. LEWIS, *Coordinator*

CURRICULUM I

Public School Endorsement

Piano Major

Freshman Year				Sophomore Year			
Quarter				Quarter			
Name of Course	Hours	Credit		Name of Course	Hours	Credit	
English 101-2-3	3	3	3	Science 121-2-3	4	4	4
Social Studies 111-2-3	3	3	3	Music 220-1-2	3	3	3
Music 120-1-2	4	4	4	Mathematics 200	3		
P. E., AFROTC	1-2	1-2	1-2	Music 131			3
Music 104-5-7	1	1	1	Soc. Std. 114		3	
Choir or Band	1	1	1	Ed 201,			
Music 11a, b, c	1	1	1	Psy. 242-243	3	3	3
Music 191-2-3	1	1	1	P. E., AFROTC	1-2	1-2	1-2
				Choir or Band	1	1	1
				Music 21a, b, c	1	1	1
	15-16	15-16	15-16		16-17	16-17	16-17
Junior Year				Senior Year			
Quarter				Quarter			
Name of Course	Hours	Credit		Name of Course	Hours	Credit	
Music 137-8-9	3	3	3	Music 420-21-51	3	3	2
English 211-2-3	3	3	3	Music 430	3		
Ed. 301, Psy. 312,				Elective		3	
Ed. 387	3	3	3	Health 211-2, Art 133	3	3	3
Music 108-134-135	1	1	1	Ed. 462, Ed. 472	3		9
Music 320-21	3	3		Choir or Band	1	1	1
Choir or Band	1	1	1	Music 41a, b	2	2	
Music 31a, b, c	2	2	2				
Mus. 471a, 471b, 304							
or 305	3	3	3				
	19	19	19		15	12	15

CURRICULUM II
Public School Endorsement
Voice Major

Freshman Year				Sophomore Year			
Quarter				Quarter			
Hours Credit				Hours Credit			
Name of Course	I	II	III	Name of Course	I	II	III
English 101-2-3	3	3	3	Science 121-2-3	4	4	4
Social Studies 111-2-3	3	3	3	Music 220-1-2	3	3	3
Music 120-1-2	4	4	4	Mathematics 200	3		
P. E., AFROTC	1-2	1-2	1-2	Music 131			3
Music 104-5-7	1	1	1	Soc. Stu. 114		3	
Choir	1	1	1	Ed. 201, Psy. 242, 243	3	3	3
Music 14a, b, c	2	2	2	P. E., AFROTC	1-2	1-2	1-2
Music 11a, b, c	1	1	1	Choir	1	1	1
				Music 24a, b, c	2	2	2
				Music 21a, b, c	1	1	1
	16-17	16-17	16-17		18-19	18-19	18-19

Junior Year				Senior Year			
Quarter				Quarter			
Hours Credit				Hours Credit			
Name of Course	I	II	III	Name of Course	I	II	III
Music 137-8-9	3	3	3	Music 420-21-51	3	3	2
English 211-2-3	3	3	3	Music 430	3		
Ed. 301, Psy. 312,				Health 211-2, Art 133	3	3	3
Ed. 387	3	3	3	Music 428		3	
Music 108-134-135	1	1	1	Psy. 462, Ed. 472	3		9
Music 320-21, Ed.	3	3		Choir	1	1	1
Choir	1	1	1	Music 44a, b	2	2	
Music 34a, b, c	2	2	2				
Mus. 471a, 471b,							
Mus. 304	3	3	3				
	19	19	16		16	12	15

CURRICULUM III
Instrumental Endorsement
Instrumental Major

Freshman Year				Sophomore Year			
Quarter				Quarter			
Hours Credit				Hours Credit			
Name of Course	I	II	III	Name of Course	I	II	III
English 101-2-3	3	3	3	Science 121-2-3	4	4	4
Social Studies 111-2-3	3	3	3	Music 220-1-2	3	3	3
Music 120-1-2	4	4	4	Mathematics 200	3		
P. E., AFROTC	1-2	1-2	1-2	Music 131			3
Music 104-5-7	1	1	1	Soc. Studies		3	
Band	1	1	1	Ed. 201, Psy. 242-243	3	3	3
Music 11a, b, c	1	1	1	P. E., AFROTC	1-2	1-2	1-2
Major Applied	2	2	2	Band	1	1	1
				Music 21a, b, c	1	1	1
				Major Applied	2	2	2
	16-17	16-17	16-17		18-19	18-19	18-19

Junior Year				Senior Year			
Quarter				Quarter			
Hours Credit				Hours Credit			
Name of Course	I	II	III	Name of Course	I	II	III
Music 137-8-9	3	3	3	Music 420-21-51	3	3	2
English 211-2-3	3	3	3	Music 430	3		
Ed. 301, Psy. 312,				Health 211-2	3	3	
Ed. 387	3	3	3	Art 133			3
Music 108-134-135	1	1	1	Music 428		3	
Music 320-21	3	3		Psy. 462, Ed. 472	3		6
Band	1	1	1	Band	1	1	1
Mus. 471b, 471c,				Major Applied	2	2	
Music 305	3	3	3				
Major Applied	2	2	2				
	19	19	16		16	12	12

COURSES IN MUSIC

Undergraduate
Applied Music Courses

The laboratory fees, unless otherwise stated, are for each quarter.

11A, B, C. *First Year Piano*. (3) Some of the easier works of Bach, Haydn, Mozart, Beethoven, and others whose work are of equivalent technical value together with purely technical materials including all major and minor scales. Prerequisite: Permission from the Office of the Music Department. Two one-half hour periods. Laboratory fee \$7.00.

21A, B, C. *Second Year Piano*. (3) Selected works from Bach, and other composers. Prerequisite: Permission from the Office of the Music Department, and Piano 11C. Two one-half hour periods. Laboratory fee \$7.00.

31A, B, C. *Third Year Piano*. (6) A major concerto, and other exacting materials requiring excellent musicianship, skills and techniques are used. Prerequisite: Music 21C. Two one-half hour periods. Laboratory fee \$7.00.

*41A, B, C. *Fourth Year Piano*. (6) The study of advanced piano materials. Prerequisite: Music 41C. Two one-half hour periods. Laboratory fee \$7.00.

12A, B, C. *First Year Organ*. (6) Pedal studies, major and minor scales, legato studies, little preludes and fugues of Bach, trios by Stainer Rheinberger, and others, and selected books of Guilmant, Mendelssohn and other reputable composers. Prerequisite: The highest non-credit level of piano 10, and permission from the Office of the Music Department. Two one-half hour periods. Laboratory fee \$20.00.

22A, B, C. *Second Year Organ*. (6) Advanced pedal studies and scales. Prerequisite: Music 12C. Two one-half hour periods. Laboratory fee \$20.00.

32A, B, C. *Third Year Organ*. (6) A continuation of pedal studies and scales in addition to the Toccata and Fugue in D Minor, and other major works, some from modern composers. Prerequisite: Music 22C. Two one-half hour periods. Laboratory fee \$20.00.

*42A, B, C. *Fourth Year Organ*. (-6) A continuation of Music 32C with special emphasis on representative works from the various schools of composition including 20th Century composers. Two one-half hour periods. Laboratory fee \$20.00.

13A, B, C. *First Year Violin or Viola*. (6) Instruction with standard elementary violin or viola materials. Prerequisite: Permission from the Office of the Music Department. Two one-half hour periods. Laboratory fee \$7.00.

23A, B, C. *Second Year Violin or Viola*. (6) Instruction with standard elementary violin or viola materials. Prerequisite: Music 13C. Two one-half hours periods. Laboratory fee \$7.00.

33A, B, C. } *Advanced Violin or Viola.* (6) Instruction with standard
43A, B, C. } advanced violin or viola materials. Prerequisite: Music 23C.
Two one-half hour periods. Laboratory fee \$7.00.

14A, B, C. *First Year Voice.* (6) The study of breath control, and voice placement in tone production. Prerequisite: Permission from the Office of the Music Department. Two one-half hour periods. Laboratory fee \$7.00.

24A, B, C. *Second Year Voice.* (6) The study of voice drills in voice placement, intonation, breathing, phrasing, diction, etc. Prerequisite: Music 14C. Two one-half hour periods. Laboratory fee \$7.00.

34A, B, C. } *Third and Fourth Year Voice.* (6) The study of drills in
44A, B, C. } vocal techniques. Prerequisites: Music 24C. Two one-half
hour periods. Laboratory fee \$7.00.

191-2-3. *Voice Class.* (3) The study of breath control, voice placement, in tone production, intonation and repertoire. Prerequisite: Permission from the Office of the Music Department. Two one-hour periods per week. Laboratory fee \$3.50.

15A, B, C. *First Year Cornet.* (6) Instruction with standard elementary materials. Prerequisite: Permission from the Office of the Music Department. Two one-half hour periods. Laboratory fee \$7.00.

25A, B, C. *Second Year Cornet.* (6) The study of standard intermediate materials. Prerequisite: Music 15C. Two one-half hour periods. Laboratory fee \$7.00.

35A, B, C. } *Third and Fourth Year Advanced Cornet.* (6) Instruction
45A, B, C. } with standard advanced materials. Two one-half hour periods.
Laboratory fee \$7.00.

16A, B, C. *First Year Trombone.* (6) Instruction with standard elementary materials. Prerequisite: Permission from the Office of the Music Department. Two one-half hour periods. Laboratory fee \$7.00.

26A, B, C. *Second Year Trombone.* (6) The study of standard intermediate materials. Prerequisite: Trombone 16C. Two one-half hour periods. Laboratory fee \$7.00.

36A, B, C. } *Third and Fourth Year Trombone.* (6) Instruction with
46A, B, C. } standard advanced materials. Two one-half hour periods. Lab-
oratory fee \$7.00.

17A, B, C. *First Year Clarinet.* (6) Instruction with standard elementary materials. Prerequisite: Permission from the Office of the Music Department. Two one-half hour periods. Laboratory fee \$7.00.

27A, B, C. *Second Year Clarinet.* (6) The study of standard intermediate materials. Prerequisite: 17C. Two one-half hour periods. Laboratory fee \$7.00.

37A, B, C. } *Third and Fourth Year Clarinet.* (6) Instruction with stan-
47A, B, C. } dard advanced materials. Two one-half hour periods. Lab-
oratory fee \$7.00.

18A, B, C. *First Year Flute.* (6) The study of standard elementary materials. Prerequisite: Permission from the Office of the Music Department. Two one-half hour periods. Laboratory fee \$7.00.

28A, B, C. *Second Year Flute.* (6) Instruction with standard intermediate materials. Prerequisite: Flute 18C. Two one-half hour periods. Laboratory fee \$7.00.

38A, B, C. } *Third and Fourth Year Flute.* (6) Individual instruction
48, B, C. } with standard advanced materials. Two one-half hour periods.
Laboratory fee \$7.00.

19A, B, C. *First Year Saxophone.* (6) The study of standard elementary materials. Prerequisite: Permission from the Office of the Music Department. Two one-half hour periods. Laboratory fee \$7.00.

*Approved for graduate credit.

29A, B, C. *Second Year Saxophone.* (6) The study of standard elementary Materials. Prerequisite: Saxophone 19C. Two one-half hour periods. Laboratory fee \$7.00.

39A, B, C. } *Third and Fourth Year Saxophone.* (6) Instruction with
49A, B, C. } standard advanced materials. Two one-half hour periods.
Laboratory fee \$7.00.

Note: Students receive two hours credit per quarter in the major applied and one hour credit for all other applied music courses.

University Choir. (1) The study of a variety of the finest choral literature. Prerequisite: Permission from the Office of the Music Department. Five or more periods.

University Band. (1) The study and performance of the finest band literature. (After the football season, the University Band becomes the Concert Band. For membership requirements see Band Director.) Prerequisite: Ability to satisfactorily play an instrument. Five or more periods.

134-5-6. *String Instrument Class.* (3) The study of the fundamentals of bowling, fingering, construction and care of string instruments. Three periods.

104. *Woodwind Class (Clarinet).* (1) Fundamentals of tone production, technic, care, construction, and minor repair. Prerequisite: Permission of the Office of the Music Department. Two periods.

105. *Woodwind Class (Flute).* (1)

106. *Woodwind Class (Saxophone).* (1)

107. *Brass Class (Trombone).* (1) Fundamentals of care, construction, minor repair, and performance.

108. *Brass Class (Cornet).* (1)

109. *Percussion Class.* (1) Fundamentals of care and minor repair; study of technic of performance on most percussion instruments with emphasis on the snare drum. Two periods.

MUSIC EDUCATION

Music 301-2-3. *Introduction to Public School Music.* (9) An introductory course in music for students in elementary education. Consists of a thorough study in music fundamentals, terminology, scales, keys, rhythms, and sight singing drills and dictation. Prerequisite: Permission from the Office of the Music Department. Three lectures.

471a. *Music Education.* (3) A study of principles, methods, materials, objectives, and procedures for teaching music in elementary schools. Prerequisite: Junior standing in Department of Music. Three lectures.

471b. *Music Education.* (3) A study of principles, methods, materials, objectives, and procedures for teaching music in secondary schools. Prerequisite: Junior standing in Department of Music. Three lectures.

471c. *Instrumental Methods.* (3) A study of methods, philosophies, materials, and objectives for teaching instrumental music from grade four (4) through grade twelve (12). Prerequisite: Junior standing in Department of Music. Three lectures.

304. *Choral Methods and Materials.* (3) A study of the principles and problems of teaching voice, managing and directing choral organizations, and the analysis and evaluation of choral materials. Prerequisite: Permission from the Office of the Music Department. Three lectures.

305. *Conducting Methods and Materials.* (3) A study of the technic of conducting with particular emphasis on the use of the baton, score reading, program planning, and rehearsal procedures. An evaluation of orchestral and other instrumental music suitable for use in secondary schools. Prerequisite: Junior standing in Department of Music. Three lectures.

Music, History, Literature, and Appreciation

131. *Music Appreciation.* (3) Emphasis on the development of the student's appreciation for the finest musical literature, and a constant extension of

his listening repertoire. Only that history which will serve to make what he hears more meaningful to him is included. Three lectures.

337-8-9. *Music History and Literature*. (9) General information concerning the history of music. Embodies an analytical approach to music history, its growth and development. Prerequisite: Permission from the Office of the Music Department. Three lectures.

Theory and Composition

119. *Orientation to Music*. (2) Elementary instruction in basic language of music, scale formation, rhythms, sight singing, melodic dictation. Attention given to practice and study habits for music majors.

120-1-2. *Freshman Theory*. (12) Basic notation, intervals, scales and modes, rhythms, contrapuntal harmony, written and keyboard, sight singing and ear training; harmonic and form analysis. Prerequisite: Pass the basic Theory Test. Three lectures.

220-1-2. *Sophomore Theory*. (9) Aural and written harmony; keyboard harmony; figured bass; counterpoint; sight singing; ear training; analysis. Prerequisite: Music 122. Three lectures.

320-1. *Counterpoint*. (6) A study of the techniques underlying the principles used in writing good melodies and their association without losing independence. Prerequisite: Music 222. Three lectures.

420-1. *Forms and Analysis*. (6) A study of composition in the smaller and larger forms. Prerequisite: Music 321. Three lectures.

430. *Orchestration*. (3) A systematic study and application of the techniques for utilizing the capabilities of orchestral and band instruments in Music Composition. Prerequisite: Music 321. Three lectures.

428. *Physics of Music*. (3) Theoretical considerations of sound production and promulgation; the tempered scale, and other scales; the acoustical basis of wind and stringed instruments; analysis of complex tones produced by human voice and certain wind instruments. Prerequisite: Music 222. Three lectures.

433. *Composition*. (3) A study of composition and the application of creative ability along systematic lines in writing original larger forms. Prerequisite: Permission from the Office of the Music Department. Three lectures.

450. *Senior Project*. (3)

451. *Senior Recital*. (2) Credit given only upon successful completion of public senior recital. Prerequisite: Permission of major applied instructor.

Art Education

The program is designed for the preparation of students who wish to continue the study of art and art education, and for those prospective teachers who wish to teach art to achieve the necessary competencies for intelligent performance as a teacher of art.

The State requirement for certification in Art is 35 quarter hours: at least 18 quarter hours with emphasis on techniques, 6 quarter hours of art appreciation and 6 quarter hours of understandings in methods and materials. It is suggested that 6 quarter hours of Art history be taken to complete the 36 hours.

A diligent student will manage his program so that he learns as much about Art as he can so that his performance will be worthy and so that he can teach with a degree of security.

Courses in Art and Art Education

133. *Man and Materials*. (3) The course is concerned with the investigation of man's experience with materials in the development of visual and plastic arts and their place in the environment.

102-3. *Art Appreciation*. (6) An opportunity to explore both historic and present day art through reading, through pictures and objects, and to investigate the influence of art on our present day living and thinking.

121-22-23. *Fundamentals of Drawing*. (9) Students work for the understanding of one and two point perspective and the function of line, shape, form, light and shade in composition. Laboratory.

131. *Design Fundamentals*. (3) Study of principles of structural and decorative design, giving opportunity for creative experiment with materials, structural form, and surface decoration.

203. *Lettering and Design*. (3) Students work freely with pens, brushes. Exercises encourage individuality and creativeness.

221-22-23. *Painting in various Media*. (9) The student has the privilege of concentrating in a chosen medium. Emphasis on the study of the environment. Creative composition from inspiration. Laboratory.

241. *Hobby Crafts*. (3) A crafts course giving art experience useful in community activities: recreation centers, camps, vacation Bible schools, Scout programs, and for individuals seeking a hobby in the plastic arts. Processes are simple, direct, modern.

301. *Pottery Crafts*. (3) A beginner's course in hand built clay construction in two and three dimensions. Slab and coil methods. Decoration by low relief, incising and colored glazes.

302-3. *Clay Modeling*. (6) Clay sculptures built in two and three dimensions. Traditional methods, and push and squeeze methods produce interesting unobjective forms. Emphasis on individual design in form and decoration. Articles are cast in plaster, or fired and glazed.

321-22-23. *Painting in Oils*. (3) Creative approach, study of form, color, technique.

401-2-3. *Art History*. (9) Survey courses from early Egyptian through the arts of Mesopotamia, Crete, Greece, Rome, Early Christian and Byzantine times.

450. *Senior Project*. (3) Gives student opportunity to express himself in writing form related to a project of his choice.

Courses in Art for Elementary Education Majors

Art 310. *Manuscript Writing, and Expression in Two and Three Dimensions*. (3) Develops skill in simple letter forms; upper and lower case letters to facilitate the teaching of reading in the first elementary grades, for chart making and chalk-board work. Aids students in understanding the art productions of children at various levels of growth, and to realize that the child's general growth is tied up with his creative development, and visa-versa.

Students experiment with devices useful in aiding release of the child's creative impulses. Students study examples of children's work for experience in evaluation of art performance at various levels of growth.

Course in Art for Business Education Majors

203. *Lettering and Design*. (3)

Related Courses in Art for Home Economics

Majors

201. *Color and Design*. (3) Good taste as it applies in personal grooming. Problems of color and design as related to the person with the home as a background, i.e., the study of art principles and certain accepted rules governing their application to personal grooming with regard to size, complexion, personality, function, occasion and other areas of importance.

202. *Color and Design*. (3) Students who have had Related Art 201 may elect 202 for guidance, and experience in further application of art principles.

203. *Costume Design*. (3) Study of historic costumes as a background and inspiration for modern costume. Does not emphasize original designing and drafting although individual ideas in keeping with good taste encouraged. Emphasis placed on the application of design principles to garment selection

with reference to the figure: size, form, age, good points, points not so good, function, occasion. Problems of dress of the average wage or below-average wage consumer with suggestions for ways to be well dressed on a limited budget. Prerequisite: Related Art 201.

204. *Costume Design*. (3) Continued experience in color with the use of pigments and colored cloth. Color schemes for various complexions. Experiments with complexion color charts. Guidance in appreciation for and understanding of design principles applied in the creation of the best commercial dress designs. Prerequisite: Related Art 201-203.

421. *House Planning*. (3) Brief study of American contribution to domestic architecture and interior decoration fixtures: panels, stairways, cornices, cabinets. Planning the small house for comfort and convenience. Appreciation for aesthetic qualities in home planning through the understanding of art principles and how to apply them; and fundamentals of blue print reading. Usually offered in the spring and summer quarters.

DIVISION OF BUSINESS

LOUIS H. SCHUSTER, Ph.D., *Director*

Objectives

The primary objectives of the Division of Business are: (1) to provide training in the methods, techniques and principles underlying modern business as a foundation for business careers; (2) to provide students with a knowledge and understanding of the changing and developing character of our economic society and the responsibility incumbent upon educated men and women engaged in economic activity; (3) to provide training in those phases of business that concern every member of organized society; and (4) to train students for the teaching of business subjects on the secondary and collegiate levels.

Organization

The Division of Business offers two curricula: Business Administration and Business Education. Special curricula may be followed by students who do not wish to obtain college degrees. A master of education degree is offered in the Division.

The Department of Business Administration sponsors a chapter of the Future Business Leaders of America—an organization open to all students of the department, beginning in the freshman year.

DEPARTMENT OF BUSINESS ADMINISTRATION

LOUIS H. SCHUSTER, Ph.D., *Head*

The curriculum in Business Administration is offered to those students who are planning for careers in accounting, insurance, financing, marketing, real estate, salesmanship, and other general business pursuits. The courses are designed to prepare students for leadership in our complex economy, as well as for professional training in the area of their choice. Moreover, the program is flexible to provide for special training in institutional management.

Each year the Wall Street Journal Award is made to an outstanding student who is a member of the Senior Class.

Requirements for the Degree

The bachelor of science degree is offered in business administration and is awarded for the attainment of knowledge and skills in business and related fields demonstrated to the satisfaction of the university.

A flexible program of study may be followed. The nature and extent of this program, in general, depends upon the student's previous training and experience. Normally, one-third of the work is in the field of concentration, one-third in related fields, and one-third in general education and electives.

The student must complete at least forty-five quarter hours in the field of Business Administration with a major emphasis in accounting, finance, insurance,

marketing, or management. Sixty quarter hours must be completed in courses on the 300 and 400 level. One hundred and ninety-eight hours are required for graduation.

CURRICULUM FOR MAJORS IN BUSINESS ADMINISTRATION

BACHELOR OF SCIENCE DEGREE

Freshman Year				Sophomore Year			
		Quarter				Quarter	
Name of Course		Hours	Credit	Name of Course		Hours	Credit
		I	II			I	II
B. A. 102			3	Acctg. 211-12-13		3	3
English 101-2-3		3	3	B.A. 330			3
Science 121-22-23		4	4	O.A. 211-12		3	3
History 201-2-3		3	3	O.A. 201			3
Art (and/or mus/Phil)			3	Mus. or Phil.		3	
Math. 171-72-73		3	3	English 211-12-13		3	3
Phys. Ed. 11-12-13		1	1	Pol. Sci. 221-22		3	3
Air Sci. 151-52-53		1	1	Geography 271-72			3
				Phys. Ed. 20-50		1	1
				Air Sci. 251-52-53		1	1
Women		17	17	Women		16	16
Men		18	18	Men		17	17

Junior Year				Senior Year			
		Quarter				Quarter	
Name of Course		Hours	Credit	Name of Course		Hours	Credit
		I	II			I	II
Acctg. 311-12-13		3	3	B.A. 441			3
B.A. 335			3	B.A. 420-21			3
B.A. 323-24-25		3	3	B.A. 328			3
B.A. 326-27			3	B.A. 423-24		3	3
B.A. 331-32		3	3	B.A. 433-34-35		3	3
Psychol. 221-22		3	3	Stat. 311		3	
Elective			3	B.A. 450			3
Econ. 201-2-3		3	3	Electives		6	6
		15	18			15	15

A PROGRAM WITH EMPHASIS IN ACCOUNTING

Students desiring a program concentrating in Accounting will follow the Business Administration program outlined above with the following exceptions:

Senior Year							
		Quarter				Quarter	
Name of Course		Hours	Credit			Hours	Credit
		I	II			I	II
B.A. 433		3		Acctg. 413-14			3
Acctg. 411-12		3	3	B.A. 450			3
Stat. 311		3		*Elective		3	
B.A. 420-21			3			15	15
Acctg. 314-15-16		3	3				
Acctg. 317			3				
Acctg. 320			3				

*Restricted electives

B.A. 336—Internship for B.A. Students
Acctg. 200 Machine Acctg.
Acctg. 400-401 Advanced Acctg.
Acctg. 418 Acctg. Systems
Acctg. 415 Comptrollership

A PROGRAM WITH EMPHASIS IN INSTITUTIONAL MANAGEMENT

The program for training in institutional management is designed to prepare persons to manage such institutions as housing projects, hospitals, educational

*Basic knowledge of keyboard required, including typing at 30 words a minute. Optional: For those entering who have met above requirements.

institutions, and the like. The student will follow generally the Business Administration program outlined above with the following exceptions:

Senior Year Name of Course	Quarter Hours Credit			*Restricted Electives
	I	II	III	
B.A. 420-21		3	3	B.A. 201—Data Processing
B.A. 433-34	3	3		B.A. 329—Salesmanship
B.A. 423-24	3	3		B.A. 336—Bus. Internship
B.A. 440			3	B.A. 337—Public Finance
B.A. 441			3	B.A. 422—Corp. Finance
Stat. 311	3			B.A. 440—Prin. of Investments
Acctg. 411-12	3	3		B.A. 431-32—Prin. of Advertising
Acctg. 415			3	B.A. 437—Prin. of Real Estate
B.A. 450			3	Acctg. 411-12—Tax Accounting
*Electives	3	3		
	15	15	15	

Course Descriptions

ACCOUNTING

211-12-13. *Elementary Accounting*. (9) A basic course in accounting theory and practice. A prerequisite to all other courses in accounting. Two one-hour laboratory periods.

Accounting 220. *Machine Accounting*. (3) Methods and problems of machine accounting including the use of punched-card system and electronic methods of processing accounting data. Prerequisite: Accounting 213.

311-12-13. *Intermediate Accounting*. (9) Theory and practice relating to the theory of the various balance sheet accounts, working papers, and statements. Prerequisite: Accounting 213. Two one-hour laboratory periods.

314-15-16. *Cost Accounting*. (9) A study of the principles of manufacturing and distribution cost accounting. Material, labor, and overhead costs in job order and process cost accounting; determination analysis of costs of distribution; and related problems treated; cost systems analyzed. (Formerly Acctg. 321-421-422). Prerequisite: Acctg. 313.

317. *Administrative Aspects of Accounting*. (3) Designed to aid students who expect to become managers; provide information concerning the meaning of accounting figures, terms, and techniques of analysis of reports; provide applications of techniques in making managerial decisions and judging performance. (Formerly Acctg. 316).

320. *Governmental Accounting*. (3) Accounting theory and problems peculiar to governmental units including organization, budgetary accounting, fiscal accounting, auditing, classification and use of funds, and financial statements and reports. Prerequisite: Accounting 213.

400-401. *Advanced Accounting Problems*. (6) Theory and problems in advanced topics, including partnership problems, insolvency, estates and trusts and consolidated statements. Prerequisite: Accounting 313.

411-12. *Federal Tax Accounting*. (6) Designed to provide a comprehensive explanation of the Federal tax structure and to provide training in the application of tax principles to specific problems.

413-14. *Auditing Procedures*. (6) Principles of auditing which include a critical examination of financial statements. The text materials are amplified by special problems. Prerequisite: Advanced status in Accounting. (Formerly Acctg. 423).

415. *Comptrollership*. (3) A study of the fiscal functions assigned the comptroller in a large enterprise in connection with construction, control, and interpretation of accounts for internal use. (Formerly Accounting 462).

418. *Accounting Systems*. (3) A study of the problems involved in the design and installation of accounting systems, including systematizing the

clerical department of business. Prerequisite: Advanced status in Accounting. (Formerly Accounting 461).

BUSINESS ADMINISTRATION

101. *Business Principles*. (3) A survey of the fundamental principles of business organization, finance, banking, credit management, salesmanship, and advertising. Required for all business majors. (Formerly Bus. Orient. 101).

102. *Business Finance*. (3) A survey of the general field of finance, including discussions of promotion; various types of business organizations; capitalization; methods of obtaining capital; business failures and re-organization.

201. *Data Processing*. (3) A study of the basic principles and applications of punched-card and record-keeping by tape in business. Card, tape, and business report designs; basic card and tape equipment, and their functions. Prerequisite: Sophomore status and above.

321-22. *Business Statistics*. (6) A study of statistical sources and collection of data, the presentation of data in tables, charts, and reports; the computation of ratios and percentages, averages, dispersion and sampling errors. Statistical theory and methods directly applicable to the solution of business and economic problems.

323-24-25. *Business Law*. (9) Fundamental principles of law most frequently involved in business transactions, including contracts, sales, partnerships, master and servant, principal and agent, corporations, negotiable instruments, property, bailments, and common carriers with the view of enabling businessmen to avoid litigation. (Formerly B.A. 322-23-24).

326-27. *Marketing Principles*. (6) A general survey of the marketing structure as it exists and functions. Problems involving marketing procedures, policies, and techniques are considered. (Formerly B.A. 311-12).

328. *Principles of Retailing*. (3) A basic survey course for students interested in retailing. Special consideration given to store organization, operation, and current distribution problems.

329. *Salesmanship*. (3) A study of the basic principles underlying the sales process and their application to the problems of salesmen. Prerequisite: Psychology 221-22 or registered therein. (Formerly B.A. 313).

330. *The Small Business Enterprise*. (3) Problems and practices peculiar to the establishment and operation of small business enterprises will be considered; opportunities, hazards, and management problems will be analyzed; case studies will be reviewed. Prerequisite: Permission of the instructor.

331-32. *Business Organization and Management*. (6) A study of the various types of business organizations and management with special emphasis on their financing by means of stock, bonds, and other instruments of finance. The work of promotion, underwriting securities, internal financial management, reorganization and receivership treated.

335. *Report Writing*. (3) The purposes of this course are to help students to develop a clear, concise, convincing, and correct writing style which is adopted to readers of a report; to help students collect, analyze, organize, interpret, and present information to solve business problems; to instill in students an awareness of correct grammar and punctuation in writing.

B.A. 336. *Internship in Business Administration*—3 hours credit. In this course, the student accepts an assignment for a period of 12 consecutive weeks in a business firm or institution cooperating with Tennessee A. & I. State University. The student works a minimum of 240 hours during the 12 week period and is paid a pre-determined, specified hourly rate by the cooperating employer. Elective with Departmental approval.

337. *Public Finance*. (3) Business expenditures; Federal and state reserve systems; financial administration; budgeting and public debt management.

420-21. *Money and Banking*. (6) The purpose of this course is to develop a sound understanding of the role of banks in our economy. Specific emphasis on central bank functions such as: the control of reserves, the supervising of

bank operations, controlling the supply of money, and carrying out the fiscal functions of the government.

422. *Corporation Finance.* (3) Corporate organization and control; corporate securities; the management of fixed capital, working capital and income; reserve, surplus, and undivided profits; investment banking and the securities market; failure and reorganization. Prerequisites: 331-32.

423-24. *Personnel Administration.* (6) An examination of the principles and methods of efficient labor management in the maintenance of harmonious relationships between management and employees. Personnel organization, personnel procedures, and employee relationships are considered.

425. *Real Estate.* (3) The course deals with real estate contracts, deeds, and mortgages, the value of leases and leaseholds, and the valuation of real estate. Questions of title and title insurance and the Tennessee law regarding real property are considered. (Formerly Business Administration 437).

431-32. *Advertising Principles.* (6) A study of the economics of advertising, the use of research in advertising, analysis of current advertising policy and methods of procedure in selecting appeals and media, writing copy, and constructing layouts. Prerequisites: Marketing 311-12. (Formerly B.A. 411-12).

433-34-35. *Principles of Insurance.* (9) Presents the personal and business uses and fundamental principles of insurance in general and the types and organization of the insurance business. Emphasis is placed on life, accident and health, automobile, fire, and other property lines. (Formerly B.A. 325-26-27).

440. *Principles of Investments.* (3) Consideration is given to the functions and economic basis of investment; basic elements of investment and personal investment programs; although emphasis is on investment in securities, other avenues of investment are considered.

441. *Principles of Management.* (3) A study of the fundamentals of the organization and management of business and industry; the tasks of the business manager; correlation of the productive functions; scientific management; basic features of business administration.

450. *Senior Project.* (3)

DEPARTMENT OF BUSINESS EDUCATION

CECILIE E. CRUMP, Ed.D., Head

A bachelor of science degree may be obtained in the department of Business Education with teacher certification or without teacher certification.

The department is a member of the National Association of Business Teacher Educators. Membership in Beta Psi Chapter of Pi Omega Pi, national honorary scholastic fraternity in Business Education, is available to all students in Business Education on the basis of superior attainment during the first two years of college work.

Requirements for Undergraduate Degree

A total of 197 hours is required for graduation, of which 70 hours must be completed in the 300 and 400 level courses. A minimum of 45 hours is required for a major in Business Education and/or Office Administration, of which 30 hours must be completed in the 300 and 400 level courses.

Students following a program of study for Office Administration will obtain 36 quarter hours in English and 36 quarter hours in Business Administration.

Certification in Tennessee

Students following the program of study for Business Education may obtain state certification in business subjects.

To be endorsed in general business, the applicant shall offer a minimum of 27 quarter hours, including 18 quarter hours in introduction to business, accounting, typewriting, business law, economics, business mathematics.

An applicant endorsed in general business may secure additional single subject endorsements for the following subjects by the completion of the hours indicated

including quarter hours completed for endorsement in general business:

Bookkeeping	15	quarter hours
Typewriting	9	quarter hours, including 3 hours of advanced typewriting
Shorthand	9	quarter hours, including 3 hours of advanced
Business Law	9	quarter hours
Economics	18	quarter hours, including principles and related subjects in that field
Salesmanship	9	quarter hours in marketing
Secretarial Practice	3	quarter hours of office practice plus certification in shorthand and typewriting
Business Machines	3	quarter hours
Business English	3	quarter hours
Business Arithmetic	9	quarter hours (6 in mathematics and 3 in business mathematics, or 9 in business mathematics)
Office or Clerical Practice	3	quarter hours in office, secretarial or clerical practice
Consumer Education	3	quarter hours in consumer economics or consumer education

Students desiring certification in other states should check bulletins in the departmental office.

DESCRIPTION OF PLAN FOR SUPERVISED STUDENT TEACHING

During the senior year, students are required to block one quarter for intensive methods and student teaching. Prospective business teachers spend two weeks, six hours a day, studying methods and procedures in directing learning activities. They are then placed in a classroom for observation and student teaching activities. After spending eight weeks at an off-campus teaching center, the students return to the department for one week to evaluate their experiences.

Off-campus student teaching centers are selected on the following basis:

1. The High School must offer business subjects (at least two or more).
2. The High School must be accredited by the State.
3. There must be a full-time business education teacher with the following qualifications:
 - a. At least two years teaching experience
 - b. Hold the Bachelor's degree in Business Education
 - c. Cooperative attitude with the training program

OFFICE INTERNSHIP

Students are required to spend one quarter in studying basic office procedures and in engaging in full-time office employment. For the first four weeks of the quarter, students work in the departmental secretarial laboratory where they study office management and engage in laboratory experiences under the supervision of the departmental supervisor. Then, they are placed in an office to work for six weeks. They return to the department the last week of the quarter for an evaluation of their experiences.

Offices selected for Office Internship are provided as follows:

1. Those offices requiring the services of a full-time secretary.
2. Offices with necessary and up-to-date equipment.
3. Offices with employers willing to cooperate with our training program.

Minor

The Department of Business Education offers a minor to students in other divisions or departments of the University. Thirty-six (36) quarter hours in Business Education and Office Administration courses are required for the

minor. The minor may be in Secretarial Training or Teacher Education. Advisers in the Division should be consulted early in the four-year college period concerning a course of study.

BACHELOR OF SCIENCE DEGREE CURRICULUM IN BUSINESS EDUCATION (WITH TEACHER CERTIFICATION)

Freshman Year				Sophomore Year			
Quarter Hours Credit				Quarter Hours Credit			
Name of Course	I	II	III	Name of Course	I	II	III
English 101-2-3	3	3	3	English 211-12-13	3	3	3
Science 121-22-23	4	4	4	Soc. Stud. 111-12-13	3	3	3
Math. 111, 112, 173	3	3	3	Econ. 211-12-13	3	3	3
Mus. 131, Art 133,				Education 201, Psych.			
Health 151	3	3	3	242-43	3	3	3
Off. Admin.				Off. Admin. 204-5-6	3	3	3
212-13-21-22	3	3	3	Phys. Ed.	1	1	1
Bus. Ed. 101-2-3	1	1	1	Air Science (Men)	1	1	1
Phys. Ed. 11-12-13	1	1	1				
Air Science (Men)	1	1	1				
Women	18	18	18	Women	16	16	16
Men	19	19	19	Men	17	17	17

Junior Year				Senior Year			
Quarter Hours Credit				Quarter Hours Credit			
Name of Course	I	II	III	Name of Course	I	II	III
Off. Admin. 304-5-6	3	3	3	Bus. Ed. 471ABC	6		
Acctg. 211-12-13	3	3	3	Bus. Ed. 472	9		
English 321-22	3	3		OA 401-2-3		9	
Off. Admin. 201			3	OA 434		3	
Bus. Admin. 323-24	3	3		BE 450		3	
Bus. Ed. 400			3	BE 413			3
Ed. 301	3			Psy. 311			3
Soc. Stud. 114	3			Psy. 312			3
Speech 221		3		Psy. 463			3
B.A. 331			3	Electives			6
	18	15	15		15	15	18

BACHELOR OF SCIENCE DEGREE CURRICULUM IN BUSINESS EDUCATION (WITHOUT TEACHER CERTIFICATION)

Freshman Year				Sophomore Year			
Quarter Hours Credit				Quarter Hours Credit			
Name of Course	I	II	III	Name of Course	I	II	III
English 101-2-3	3	3	3	English 211-2-3	3	3	3
Science 121-2-3	4	4	4	Economics 211-2-3	3	3	3
Math. 111, 112, 173	3	3	3	O.A. 204-5-6	3	3	3
B.E. 101-2-3	1	1	1	O.A. 201-2, Psy. 221	3	3	3
O.A. 212-13, 221-22	3	3	3	Speech 221, Eng. 272,			
Health 151, Music 131,				Art 203	3	3	3
Art 133	3	3	3	Phy. Educ.	1	1	1
Physical Ed. 101-2-3	1	1	1	Air Science (Men)	1	1	1
Air Science (Men)	1	1	1				
Women	18	18	18	Women	16	16	16
Men	19	19	19	Men	17	17	17

Junior Year				Senior Year			
Quarter Hours Credit				Quarter Hours Credit			
Name of Course	I	II	III	Name of Course	I	II	III
English 321-22-23	3	3	3	O.A. 401-2-3	3		6
O.A. 304-5-6	3	3	3	B.A. 423	3		
Acctg. 211-12-13	3	3	3	B.E. 450			3
B.A. 323-24-25	3	3	3	B.A. 331-32	3	3	
English 301-2-3	3	3	3	Psy. 311	3		
B.A. 326-335	3	3		B.A. 321		3	
				O.A. 301		3	
				Electives	6	6	
				B.A. 434			3
	18	18	15		18	15	12

DESCRIPTION OF COURSES

OFFICE ADMINISTRATION

OA 201. *Office Machines.* (3) Basic instruction and training to develop reasonable skill in the operation of the calculating, duplicating, voice writing, and other common office appliances. (Prerequisite: O.A. 212.)

OA 202. *Office Machines.* (3) Instruction and training to develop a high degree of skill in the operating of the three major duplicating machines: mimeograph, multilith and multigraph. Also includes the vari-typer, addressograph, and other office appliances. Prerequisite: OA 201.

OA 204-5-6. *Beginning Shorthand.* (9) Designed to develop an understanding of the basic principles of simplified Gregg Shorthand, and the ability to apply these principles to an extensive shorthand writing vocabulary.

OA 211-2-3. *Beginning Typewriting.* (9) Beginning typewriting for business majors, and so far as facilities permit, for other students who wish to acquire skill in typewriting.

OA 221-222. *Typewriting Speed.* (6) Development of superior skill in typewriting, to enable students to meet the demand for higher production rates for typewritten material.

OA 301. *Office Systems.* (3) Routine and procedures for handling correspondence and mailing, filing system, oral communication, office planning and layout. Systems of control are applied to each type of office work.

OA 304-5. *Advanced Shorthand and Transcription.* (6) Skill in taking dictation and in typewritten transcription is developed concurrently in this course in the process of building a usable skill in maximum production of mailable type transcripts.

OA 306. *Secretarial Training.* (3) Instruction in office procedures, performance of upper-level secretarial duties, filing, business ethics, and personality development.

OA 401-2-3. *Office Internship and Secretarial Problems.* (9) Based on a job-training program which provides opportunity for practical experience under actual office conditions. For seniors only.

OA 434. *Problems of Office Management.* (3) Problems involved in planning and directing the functions of business and professional offices, including office building, layout, management and preparation of office manuals.

BUSINESS EDUCATION

BE 101-2-3. *Guidance and Orientation to Business.* (3) A guidance, business and library orientation course for freshmen and new students. Includes orientation to the University, to the Department, to the area of business, and a survey of library resources and techniques. During the last quarter, students study principles of business.

BE 400. *Principles of Business Education.* (3) A study of the historical background, philosophy and objectives, principles and problems, and trends in business education.

BE 413. *Curriculum Construction in Business Education.* (3) Aims, principles, practices, and problems involved in the construction of business curricula for the various types of educational institutions in which business subjects are taught.

BE 450. *Senior Project Writing.* (3) Designed to aid the senior student in writing the project required for graduation.

BE 471A. *Methods of Teaching Typewriting.* (2) Methods and materials in teaching typewriting. (Pre-requisite, BE 400, courses in typewriting and education courses). Seniors only. See requirements for student teaching.

BE 471B. *Methods of Teaching Shorthand.* (2) Methods and materials of teaching Gregg Shorthand and transcription. (Pre-requisite: BE 400, shorthand courses, and other education courses). Seniors only.

BE 471C. *Teaching the Social Business Subjects.* (2) Methods of classroom procedure in the teaching of general business subjects, business law, business organization, elementary economics, bookkeeping, and other business subjects.

BE 472. *Observation and Student Teaching Business Subjects.* (9) Student teaching in the field in an accredited high school, in shorthand, typewriting, and other business subjects. (Prerequisite: methods courses).

DEPARTMENT OF HEALTH AND PHYSICAL EDUCATION

JOHN D. HARVEY, Ed.D., *Coordinator*

LUA S. BARTLEY, Ph.D., *Head, for Women*

C. M. LEATHERS, D.S.H., *Head, for Men*

The undergraduate curriculum in the department of Health and Physical Education is designed to serve all students in the University by contributing to their health, organic vigor, and good mental and physical habits. The department aims (1) to provide incentives for students to engage in some physical activities as a balance to the demands of college life; (2) to provide opportunities for students to develop a reasonable degree of skill in a variety of leisure-time activities both for immediate and later use; (3) to offer opportunities for worthwhile social contacts in the activities of the service program, in intramural activities, and in intercollegiate athletics; and (4) to prepare prospective teachers in the field of health education, physical education, and athletic coaching.

A minimum total of 192 quarter hours is required for graduation with a major in health and physical education of which 66 quarter hours must be on the 300-400 levels. Students who qualify for the bachelor's degree with a major in this department and plan to teach on the secondary school level must earn 61 quarter hours in the General Education Curriculum and 36 quarter hours in Core Professional Education as outlined and prescribed by the University.

A major in health and physical education requires sixty-six (66) quarter hours distributed as follows: thirty-six (36) quarter hours in physical education theory; eighteen (18) quarter hours in health education; and twelve (12) quarter hours in physical education fundamentals and techniques. Of the sixty-six (66) quarter hours thirty-six (36) quarter hours must be in courses numbered in the 300 and 400 series.

A minor in health education requires thirty-three (33) quarter hours as outlined. A minor in physical education requires thirty-six (36) quarter hours as outlined.

An applicant for certification in health and physical education must complete a total of thirty-six (36) quarter hours of which eighteen (18) quarter

hours are in health education and eighteen (18) quarter hours are in physical education as outlined.

THE PHYSICAL EDUCATION SERVICE PROGRAM

All freshman and sophomore students are required to take two hours of physical education activity each week until six quarters of work have been completed. Students whose physical condition do not permit them to pursue the regular activity courses must take courses in "adapted physical education." These students must secure an admit through the University Physician following a health examination.

Required Courses for All Freshman Students:

	Credit
P.E. 11 Body Conditioning and Group Games	1
P.E. 12 Elementary swimming	1
P.E. 13 Volleyball	1

Required Courses for All Sophomore Students—Select any three:

P.E. 21 Basketball	1
P.E. 22 Folk and Square Dancing	1
P.E. 23 Soccer and Speedball	1
P.E. 26 Tennis	1
P.E. 27 Clog and Tap Dancing	1
P.E. 28 Modern Dance	1
P.E. 29 Softball	1
P.E. 30 Touch Football	1
P.E. 31 Archery	1
P.E. 32 Badminton and Deck Tennis	1
P.E. 33 Boxing	1
P.E. 34 Track and Field	1
P.E. 35 Wrestling	1
P.E. 36 Field Hockey	1
P.E. 38 Bowling	1
P.E. 39 Handball and Shuffleboard	1
P.E. 41 Golf	1
P.E. 42 Social Dancing	1
P.E. 43 Horseback Riding	1
P.E. 91-96 (incl.) Individually-Adapted Physical Education	1

Uniform Regulations.—Students enrolled in physical education activity courses are required to provide themselves with the following apparels to be secured through the channel set up by the University:

Women

One regulation gymnasium suit	\$ 4.00
One pair of socks .....	.50
One pair of gymnasium shoes	3.50
One swimming suit	3.00
One bathing cap	1.00

Total\$12.00

Men

One white "T" shirt	\$ 1.00
One pair of blue shorts	1.50
One pair of socks .....	.50
One pair of gymnasium shoes	4.00
One pair of swimming trunks	2.50
One athletic supporter .....	.75

Total\$10.25

These prices are subject to change. Uniform regulations for elected courses as bowling, dancing, and golf are governed by the activity (for example: Leotards \$4.25, Bowling shoes \$4.95).

Lock-Locker-Towel Regulations.—Each student is required to purchase a specified regulation lock which is his for subsequent courses. He pays \$1.00 towel service fee which entitles him to a clean towel each class period. In addition a deposit of \$1.00 must be made for the towel. This \$1.00 is refunded when the towel is returned in an acceptable condition.

Courses Required for Health Instruction as a Minor. In addition to certain prescribed courses, a minor in health education must include 33 quarter hours of work as follows:

Course	Credit
Health 151 Personal Hygiene	3
Health 211 Health Examination	3
Health 212 School Hygiene	3
Health 213 Health Instruction	3
Health 301 Community Hygiene and Sanitation.....	3
Health 302 First Aid and Care of Injuries.....	3
Health 304 Family Health	3
Nutrition 212 Nutrition for Teachers.....	3
HPE 401 Seminar in Health and Physical Educ.....	3
HPE 402 Organization and Administration of Health and Physical Education.....	3
HPE 403 Individual Physical Education for Handicapped Students..	3
Total	33

Courses Required for Certification in the Area of Health Instruction

Course	Credit
Health 151 Personal Hygiene	3
Health 211 Health Examination	3
Health 212 School Hygiene	3
Health 213 Health Instruction	3
Nutrition 212 Nutrition for Teachers.....	3
Health 301 Community Hygiene and Sanitation.....	3
Health 302 First Aid and Care of Injuries.....	3
Health 304 Family Health	3
Total	24

Courses in Health Education

Undergraduate

111. **Orientation in Health Education.** (2) A broad overview of the field of health education and its contributions to healthful living. Learning experiences in health provided to orient the student to the relationships which exist among the home, school, and community. The role of the health education teacher in helping the school to realize the broad objectives of education emphasized. Opportunities for service in the recognized areas of health education surveyed in addition to training requisites. Required of all majors in health and physical education.

151. **Personal Hygiene.** (3) Emphasis placed on positive health through a consideration of various conditions which affect health. A study of the care of the various systems of the body. Discussions center around food and nutrition; recreation and rest; care of the feet, hair, and skin; clothing; fads; and disease prevention. An elective for students fulfilling the 60-hour core curriculum in general education.

211. **Health Examination.** (3) Designed to give a general knowledge of those procedures set up to determine the health status of the child and to relate ways and means of enlisting the cooperation of pupils, teachers, and parents in health protection. Required of all majors in health and physical education.

212. **Nutrition for Teachers.** (3) See Curriculum of Foods and Nutrition for description. Required of all majors in health and physical education.

212. **School Hygiene.** (3) Concerned with giving general information regarding the total environment in which the child lives while at school. Stress placed on classroom conditions that are conducive to healthful living and the part the teacher, pupil, and janitor play in maintaining a healthful situation. Required of all majors in health and physical education.

213. **Health Instruction.** (3) Emphasis placed on a knowledge of child nature, sources of health information and materials, and ways of gathering such information. Suggestions made regarding techniques and procedures for discovering health needs, with special stress on practice in methods of planning, preparing, and presenting instructional units. Required of all majors in health and physical education.

301. **Community Hygiene and Sanitation.** (3) Designed to acquaint students and teachers with practices and procedures in controlling the environment, especially such practices as are now used in the control of communicable diseases, food, water, waste materials, and other sanitation problems arising in suburban areas. Various methods of ventilating, heating, and lighting in their relationships to health stressed. An elective for students fulfilling the 60-hour core curriculum in general education. Required of majors.

302. **First Aid and Care of Injuries.** (3) Planned for students, teachers, and athletic coaches who often are faced with common emergencies that may arise in the home, school, and gymnasium or on the athletic field and playground. Special emphasis placed on safety procedures to prevent common accidents that arise in these areas. Major consideration given to demonstration and practice of general first aid care of emergencies with specific stress placed on bandaging, the controlling of bleeding, administering artificial respiration, and the treatment of strains, bruises, sprains, wounds, and shocks. A Red Cross certificate is given for successful completion of the course. Required of all majors in health education and physical education.

304. **Family Health.** (3) Aims to acquaint the student with the important individual, family, and community factors essential to healthful living. The significance of heredity, nutrition, and housing in effective family living emphasized. Stress placed upon the provision and use of health services for material and child care, and for the prevention of illness. The mental, physical, and emotional aspects of family health also considered. Prerequisites: Nine quarter hours in health education. Required of all majors in health and physical education.

401. **Seminar in Health and Physical Education.** (3) Designed to acquaint the prospective teacher with changing trends in health education and in physical education as related to present educational practices. Conducted on a problem-project basis. Required of all majors in health and physical education and minors in health education or physical education. Prerequisites: Twenty-one quarter hours in health education and physical education courses.

402. **Organization and Administration of Health and Physical Education.** (3) Considers the philosophies, policies, procedures, and financing of school health services and of the physical education program. Effective approaches are discussed for setting up a program and initiating it in relation to the entire curriculum of the school and community needs. Includes utilization and care of facilities and equipment, scheduling of classes, teaching loads, classification of pupils, selection of content, record keeping, and evaluation. Required of all majors in health and physical education and minors in health education or physical education. Prerequisite: Twenty-one quarter hours in health education and physical education courses.

403. **Individual Physical Education for Handicapped Students.** (3) A study of the types of cases requiring modified physical education activity with instruction in specific activities for each type. Class work is organized on a laboratory basis to provide practical experience in conducting the program. Required of majors in health and physical education and minors in health education or physical education. Prerequisite: Health Education 302 and twenty-one quarter hours in health and physical education courses.

**CURRICULUM FOR BACHELOR OF SCIENCE DEGREE WITH A MAJOR IN
HEALTH AND PHYSICAL EDUCATION**

<i>Freshman Year</i>				<i>Sophomore Year</i>			
<i>Quarter Hours Credit</i>				<i>Quarter Hours Credit</i>			
<i>Name of Course</i>	<i>I</i>	<i>II</i>	<i>III</i>	<i>Name of Course</i>	<i>I</i>	<i>II</i>	<i>III</i>
English 101, 102, 103...	3	3	3	Literature 211, 212, 213	3	3	3
Social Sciences	3	3	3	Social Sciences	3		
Biology 101, 102, 103...	4	4	4	Zoology 202, 203		4	4
Health Educ. 151	3			Health Educ. 211, 212, 213	3	3	3
Art 133		3		Mathematics 200	3		
Music 131			3	Education 201	3		
HPER Orientation				Psychology 242, 243		3	3
111, 112, 113	2	2	2	Nutrition 212		3	
Required P.E.				Phy. Educ. 103, 202, 243	2	1	3
11, 12, 13	1	1	1	Required P.E.	1	1	1
Air Science (Men)	1	1	1	Air Science (Men)	1	1	1
Women	16	16	16	Women	18	18	17
Men	17	17	17	Men	19	19	18

<i>Junior Year</i>				<i>Senior Year</i>			
<i>Quarter Hours Credit</i>				<i>Quarter Hours Credit</i>			
<i>Name of Course</i>	<i>I</i>	<i>II</i>	<i>III</i>	<i>Name of Course</i>	<i>I</i>	<i>II</i>	<i>III</i>
Education 301, 371, 387	3	3	3	Education 462, 472	3	9	3
Health Educ. 301, 302, 304	3	3	3	Psychology 463			
Psychology 312	3			Health and Phys. Educ. 401, 402, 403	3	3	3
Phy. Educ. 311, 312, 333	3	3	3	Health and Physical Education 450			3
Phy. Educ. 421, 422, or 423, 434	2	2		Phys. Educ. (Fund and Tech Rhythms or Sports)	2	2	2
Health and Physical Education 471			3	Electives	6		3
Phys. Educ. (Fund and Tech Rhythms or Sports)	2	2	2				
Electives		3	3				
	16	16	17		14	14	14

**REQUIREMENTS FOR THE BACHELOR OF SCIENCE DEGREE
WITH A MAJOR IN HEALTH AND PHYSICAL EDUCATION**

Without Teacher Certification

<i>COURSES REQUIRED</i>	<i>Quarter Hours</i>
<i>Liberal Education Core:</i>	57
Communication	
English 101-102-103	9
Humanities	15
World Literature 211-212-213	9
Any two courses in	6
Philosophy 301 or 323	
Music 131	
Art 133	
Foreign Language above 100 level	

Social Science (9 hours sequential order—one field)	12
History	
Sociology	
Political Science	
Geography or Economics	
Natural Science (sequential order—one field)	12
Mathematics (sequential order)	9 or 3
Major Core:	66
Physical Education Theory	36
Physical Education Fundamentals and Techniques	12
Health Education	18
Prescribed Electives:	60
HPER Orientation 111-112-113	6
*Art, Music, Speech, or Dramatics	9
Psychology	9
Education	12
*Natural Science	12
*Social Administration and or Sociology	12
Free Electives:	9
Total	192

SUMMARY OF REQUIREMENTS FOR HEALTH AND PHYSICAL EDUCATION MAJORS

<i>Area</i>	<i>Quarter Hours</i>
General Education	61
Core Professional	36
Major: Health and Physical Education	66
Zoology 202, 203	8
Minor and/or Electives	21
Total	192
	<i>Quarter Hours</i>
Sophomore:	Health 211, 212, 213
	Physical Education 103*, 202*, 221*, 243
	17
Junior:	Health 301, 302, 304
	Physical Education 311, 312, 333, 471
	Fundamentals and Techniques 6 hrs
	27
Senior:	HPE 401, 402, 403
	Physical Education 421 or 422/423/434, 450
	Fundamentals and Techniques 6 hrs
	22
Total	66

A minimum of twelve (12) quarter hours is required in fundamentals and techniques from the three groups as outlined below in addition to PE 103 Conditioning, Apparatus, Stunts and Tumbling and PE 202 Intermediate Swimming.

GROUP I INDIVIDUAL AND DUAL SPORTS (any four)				
231	Archery	236	Golf	
233	Tennis	235	Badminton	
234	Track and Field	237	Handball and Shuffleboard	
		239	Bowling	

* Exclusive of courses selected in Liberal Education Core.

GROUP II TEAM SPORTS (any four).....				4
101M	Football	203	Volleyball and Deck Tennis	
101W	Field Hockey	212	Basketball	
201	Soccer and Speedball	213	Softball	
GROUP III RHYTHMS				4
211	Modern Dance	223	Modern Dance Composition	
*221	Folk Rhythms	240	Social Dancing	
222	Tap Rhythms			

Courses Required for Physical Education as a Minor: Thirty-six (36) quarter hours.

Course	Credit
Physical Education 103 Conditioning, Apparatus, Stunts and Tumbling	2
Physical Education 202 Intermediate Swimming	1
Physical Education 221 Folk Rhythms	2
Physical Education 243 Play and Games for Elementary Schools.....	3
Physical Education 333 Principles and Philosophy.....	3
Physical Education 421 Athletic Coaching and Officiating—Football or 422 Athletic Coaching and Officiating—Basketball	2
Physical Education 471 Methods in Physical Education.....	3
Health 302 First Aid and Care of Injuries.....	3
Health and Physical Educ. 402 Organization and Administration of Health and Physical Education.....	3
Health and Physical Educ. 403 Individual Physical Education for Handicapped Students.....	3
Electives from Rhythmic Activities.....	2
Physical Education 211 Fundamentals and Techniques—Modern Dance	
Physical Education 222 Tap Rhythms	
Physical Education 223 Modern Dance Composition	
Physical Education 240 Social Dancing	
Electives from Team Sports.....	4
Physical Education 101M Fundamentals and Techniques—Football or 101W Fundamentals and Techniques—Field Hockey	
Physical Education 201 Fundamentals and Techniques—Soccer and Speedball	
Physical Education 203 Fundamentals and Techniques—Volleyball and Deck Tennis	
Physical Education 212 Fundamentals and Techniques—Basketball	
Physical Education 213 Fundamentals and Techniques—Softball	
Electives from Individual and Dual Sports.....	5
Physical Education 231 Fundamentals and Techniques—Archery	
Physical Education 233 Fundamentals and Techniques—Tennis	
Physical Education 234 Fundamentals and Techniques—Track and Field	
Physical Education 235 Fundamentals and Techniques—Badminton	
Physical Education 236 Fundamentals and Techniques—Golf	
Physical Education 237 Fundamentals and Techniques—Handball and Shuffleboard	
Physical Education 239 Fundamentals and Techniques—Bowling	
Physical Education 241 Fundamentals and Techniques—Boxing	
Physical Education 242 Fundamentals and Techniques—Wrestling	
Total	36

*Specifically required.

Courses Required for Certification in the Area of Health and Physical Education: Eighteen (18) quarter hours in Health Education and eighteen (18) quarter hours in Physical Education.

Course	Credit
Nutrition 212 Nutrition for Teachers	3
Health 212 School Hygiene	3
Health 213 Health Instruction	3
Health 301 Community Hygiene and Sanitation.....	3
Health 302 First Aid and Care of Injuries.....	3
Health 304 Family Health	3
	18
Physical Education 103 Conditioning, Apparatus, Stunts and Tumbling	2
Physical Education 202 Intermediate Swimming	1
Physical Education 243 Play and Games for Elementary Schools.....	3
Health and Physical Educ. 403 Individual Physical Education for Handicapped Students	3
Electives from Rhythmic Activities one course:	
Physical Education 221 Folk Rhythms or	
Physical Education 222 Tap Rhythms.....	2
Electives from Team Sports four courses:.....	4
Physical Education 101M Fundamentals and Techniques—Football or 101W Fundamentals and Techniques—Field Hockey	
Physical Education 201 Fundamentals and Techniques—Soccer and Speedball	
Physical Education 203 Fundamentals and Techniques—Volleyball and Deck Tennis	
Physical Education 212 Fundamentals and Techniques—Basketball	
Physical Education 213 Fundamentals and Techniques—Softball	
Electives from Individual and Dual Sports three courses:.....	3
Physical Education 231 Fundamentals and Techniques—Archery	
Physical Education 233 Fundamentals and Techniques—Tennis	
Physical Education 234 Fundamentals and Techniques—Track and Field	
Physical Education 235 Fundamentals and Techniques—Badminton	
Physical Education 236 Fundamentals and Techniques—Golf	
Physical Education 237 Fundamentals and Techniques—Handball and Shuffleboard	
Physical Education 239 Fundamentals and Techniques—Bowling	
	18
Total	36

Courses in Physical Education

Undergraduate

Courses numbered in the 100's and 200's include theoretical and practical work and are designed for majors in health education, physical education and in recreation only.

101M. *Fundamentals and Techniques in Football.* (1) Required of men majors.

101W. *Fundamentals and Techniques in Field Hockey.* (1) An elective.

103. *Conditioning, Apparatus Work, Stunts and Tumbling.* (2) Required of majors.

112. *Orientation in Physical Education.* (2) General introduction to physical education including a brief history, modern trends, professional organizations, and opportunities in the field. Acquaints the freshman student with the nature and content of course offerings of the department. Required of majors in health education, physical education, and recreation.

113. *Orientation in Recreation.* (2) An introductory survey of the field of recreation. Aims to give the student general information about the field of recreation and to emphasize the duties and responsibilities of all recreation personnel. Also attempts to acquaint the student with knowledge, skills, and techniques needed by recreation personnel, and the job opportunities for those successfully completing the recreation curriculum. Required of all majors in health and physical education.

201. *Fundamentals and Techniques in Soccer and Speedball.* (1) An elective for majors.

202. *Intermediate Swimming.* (1) Instruction in the fundamental arm and leg stroke techniques, plain diving, and elementary forms of rescue leading to Red Cross Certification. Required of majors and those seeking certification. Prerequisite: Ability to swim 60 feet.

203. *Fundamentals and Techniques in Volleyball and Deck Tennis.* (1) An elective for majors.

211. *Fundamentals and Techniques in Modern Dance.* (1) An elective for majors.

212. *Fundamentals and Techniques in Basketball.* (1) An elective for majors.

213. *Fundamentals and Techniques in Softball.* (1) An elective for majors.

221. *Folk Rhythms.* (2) Dances that are peculiar to foreign countries such as Hungary, Germany, Sweden, Russia, and England are taught with emphasis upon the relationship of movements to custom and habits of each particular country. Opportunity for participating in mixers, rounds, and square dances with stress on the western cowboy type suitable for use at the upper elementary and secondary school levels. Required of majors.

222. *Tap Rhythms.* (2) Materials included which serve as a functional basis both for in-school and out-of-school activities. Modern music used to develop routine in slow and fast fox trot and waltz-time. An elective for majors in physical education.

223. *Modern Dance Composition.* (2) Experimentation in applying the basic laws of movement to contemporary dance and fundamental principles governing the development of dance movement into an art form for high school and college levels. An elective for majors. Prerequisite: P.E. 211.

231. *Fundamentals and Techniques in Archery.* (1) An elective for majors in physical education.

232. *Advanced Swimming and Life Saving.* (1) A professional course for training teachers. Practice provided for all coordinate styles of swimming, instruction in life saving and water safety skills, and in techniques leading to the American Red Cross Senior Life Saving and Water Safety Certificate. An elective. Prerequisite: P.E. 202 or equivalent.

233. *Fundamentals and Techniques in Tennis.* (1) An elective for majors.

234. *Fundamentals and Techniques in Track and Field.* (1) An elective for majors.

235. *Fundamentals and Techniques in Badminton.* (1) An elective for majors.

236. *Fundamentals and Techniques in Golf.* (1) An elective for majors.

237. *Fundamentals and Techniques in Handball and Shuffleboard.* (1) An elective for majors.

239. *Fundamentals and Techniques in Bowling.* (1) An elective for majors.

240. *Social Dancing.* (1) An elective for majors.

241. *Fundamentals and Techniques in Boxing.* (1) An elective for men majors.

242. *Fundamentals and Techniques in Wrestling.* (1) An elective for men majors.

243. *Play and Games for Elementary Schools.* Formerly P.E. 401. (3) Acquaints the student with a knowledge of the theory and practice of rhythmic activities, mimetic activities, hunting games, story plays, games, sports, athletic games, and other activities as they are related to the elementary school. Considers and explains different methods of teaching these activities at various age and grade levels. Provides a careful study of some factors that make up a well rounded physical education program in the elementary schools including objectives of the program, organization of the program, and activities of the program. Discussions of play areas, equipment, and supplies. Required of majors and minors in physical education.

253. *Principles of Recreation.* (3) Designed to acquaint the student with the fundamentals of recreation and the techniques for organizing and promoting leisure-time activities for home, school, and community. Aims to develop a philosophy of recreation consistent with the aims and objectives of education. An elective.

311. *General Anatomy.* (3) Elementary course in gross anatomy designed to offer the student in health education, physical education, and recreation an opportunity to acquire a general knowledge of the gross structure of the human body. Required of all majors.

312. *Kinesiology.* (3) A study of the bones, joints, ligaments, and muscles and their functions in the various movements involved in games, sports, and other physical education activities. Stresses ways of incorporating health education and physical education. Required of majors in physical education. Prerequisite: P.E. 311.

333. *Principles and Philosophy.* (3) An application of anatomy, physiology, psychology, and sociology to physical education methods and procedures. Required of majors in physical education. Prerequisites: Educ. 201, Psych. 242, and 243.

353. *Playground Management and Supervision.* (3) Proposes to equip the student to manage and supervise playgrounds. Emphasizes program planning, current trends in principles, philosophy, skills, and techniques in playground management and supervision. An elective.

401. *Seminar in Health and Physical Education.* (3) Designed to acquaint the prospective teacher with changing trends in health education and in physical education as related to present educational practices. Conducted on a problem-project basis. Required of all majors in health and physical education and minors in health education or physical education. Prerequisites: Twenty-one quarter hours in health education and physical education courses.

402. *Organization and Administration of Health and Physical Education.* (3) Considers the philosophies, policies, procedures, and financing of school health services and of the physical education program. Effective approaches are discussed for setting up a program and initiating it in relation to the entire curriculum of the school and community needs. Includes utilization and care of facilities and equipment, scheduling of classes, teaching loads, classification of pupils, selection of content, record keeping, and evaluating. Required of all majors in health and physical education and minors in health education or physical education. Prerequisites: Twenty-one quarter hours in health education and physical education courses.

403. *Individual Physical Education for Handicapped Students.* (3) A study of the types of cases requiring modified physical education activity with instruction in specific activities for each type. Class work organized on a laboratory basis to provide practical experience in conducting the program. Required of majors in health and physical education and minors in health education or physical education. Prerequisite: Health Education 302 and twenty-one quarter hours in health and physical education courses.

412. *Organization and Administration of Recreation.* (3) Aims to give the student a knowledge of the organizational, administrative, and supervisory policies and procedures utilized in the field of recreation. This knowledge is further supplemented with the skills and techniques necessary to prepare the student to meet and solve the many problems to be encountered as an administrator of

recreation in parks, playgrounds, churches, camps, settlement houses, Christian associations, clubs, and community centers. An elective.

413. *Program Planning in Physical Education.* (3) Acquaints the student with the state and recommended programs in physical education. Stresses ways of incorporating physical education into the total school program. Emphasis is placed on plans and procedures for adapting programs to local conditions. An elective for majors and minors in health and physical education. Prerequisites: P.E. 243, 333, and 471.

414. *Organization and Administration of Camping and Scouting.* (3) It is designed to give the student a general background and information about the organization and administration of camping and scouting and suggests means of helping the community or neighborhood organize itself to utilize the program. It further emphasizes the physical aspects, especially in camping and outdoor activities. An elective.

421. *Athletic Coaching and Officiating in Football.* (2) Examinations and explanations of rules, methods of organizing, practice and handling of teams, strategy, team offense and defense, and various fundamentals and techniques in football. Required of men majors in health and physical education. Prerequisite: Approval of the instructor.

422M. *Athletic Coaching and Officiating in Basketball.* (2) Fundamentals of basketball from a coach's and an official's point of view. Required of men majors in health and physical education. Prerequisite: Approval of the instructor.

422W. *Athletic Coaching and Officiating in Basketball and Volleyball.* (2) Fundamentals of basketball and volleyball from a coach's and an official's point of view. An opportunity given for the student to qualify as a local or national official in basketball and/or volleyball. Required of women majors in physical education. Prerequisite: Approval of the instructor.

431. *Measurement and Evaluation in Physical Education.* (3) Acquaints the student with tests available in physical education. Deals with the theory, application, and administration of tests for use in evaluating the content and methods, measuring students' achievements, and grading. An elective.

434. *Festivals and Demonstrations.* (2) Organized to acquaint the student with materials, methods, and techniques of presenting pageants, festivals, exhibitions, athletic events, special celebrations, and events of a similar nature. Includes a study and discussion of activities calling for a large number of participants and methods of combining a number of areas as dancing, dramatics, crafts, and athletics. Credit for this course satisfies two of the four hours required in athletic coaching.

450. *Senior Project.* (3) Designed to give the student an opportunity to work upon and develop a problem of interest to him in the area of physical education. A student may follow one of two plans: namely, (1) prepare a junior thesis utilizing the techniques of professional writing which adhere to an acceptable form or (2) present a laboratory problem which may be a dance recital, intramural or recreational program, pageant, or play day. If plan (2) is followed the student must write a synopsis of the project accompanied by photographs or drawing and diagrams. Required of prospective graduating seniors. A senior should enroll in this course at least one quarter prior to the expected date of graduation.

471. *Materials and Methods in Health and Physical Education.* (3) Special attention to content of the program methods, procedures, techniques, and devices relative to individual and dual sports, team games, rhythms, self-testing activities, and related events for boys and girls at the secondary school level. Required of majors and minors in physical education. Prerequisites: P.E. 221, 222, and 243.

481. *Organization and Administration of Intramural Activities.* (3) Lectures, discussions, and projects dealing with finance, equipment, types of tournaments, schedules, policies, and officiating. An elective.

483. *History of Physical Education.* (3) The evolution of physical education from ancient time to the present. Considerations of the relationship of

physical education to education and to national life and ideals during various historical periods. An elective.

DEPARTMENT OF PSYCHOLOGY

M. I. CLAIBORNE, Ph.D., Head

The courses in the department of Psychology are designed to satisfy the needs of two groups of students: First, students who desire to major in psychology as preparation for a career in psychology or who desire intensive training in psychology as background for social work, personnel work, medicine, or psychiatry; and second, students who desire training in psychology as a part of the professional training for classroom teaching and other public school work.

Requirements for a Major in Psychology

Requirements for a major in psychology are Psychology 221-22-23 (the basic courses in general psychology) and thirty-six additional hours in psychology courses on the 300 and 400 levels. Requirements for a minor in psychology are Psychology 221-22-23, and eighteen additional hours in psychology courses on the 300 and 400 levels.

Supporting courses in other departments required for a major in psychology are: Biology 111-12-13, Mathematics 131-32-33, Sociology 211-12-13, two years French or German, Art Appreciation and Music Appreciation.

Recommended electives: Genetics, Human Physiology, Physics, Philosophy, Anthropology, Economics and advanced courses in the areas of Sociology and Economics.

Graduation requirements for Bachelor of Arts degree in Psychology: complete the basic Liberal Arts Core, fulfill the general college requirements for Bachelor of Arts degree (two years college foreign language, one year laboratory science, one year college mathematics), earn a minimum of 195 hours credit, 72 of which must be in 300 and 400 level courses including the 36 hours of advanced psychology required for major.

Psychology majors preparing for a public school teaching career, or who are majoring in psychology as a background for social or personnel work may waive the two-year foreign language requirement and earn the Bachelor of Science degree.

Psychology majors who desire to earn a teacher's certificate should take the General Education Core (instead of the Liberal Arts Core), elect as a minor the subject field for which they wish to be certified, and choose their electives from that area and from the area of secondary education. (See Secondary Education, page 143, for certification requirements).

Psycho-Educational Clinic

Children's Level: The clinic offers a children's service to public schools that consists of mental testing and diagnosis of learning disabilities, with recommendations for treatment.

College Level: The clinic offers the following services to college students: educational guidance based on mental testing, aptitude testing, and interest and personality inventories; and diagnosis of academic failure followed by counseling relative to removing the causes of failure.

Reading Clinic: The reading clinic is designed to diagnose and offer training leading to the correction of reading disabilities on both the child and the adult level.

Advanced psychology majors and graduate students in educational or general psychology may receive credit for supervised work in the Psycho-Educational Clinic.

**CURRICULUM FOR BACHELOR OF ARTS DEGREE WITH A
MAJOR IN PSYCHOLOGY**

<i>Freshman Year</i>				<i>Sophomore Year</i>			
<i>Quarter</i>				<i>Quarter</i>			
<i>Name of Course</i>	<i>I</i>	<i>II</i>	<i>III</i>	<i>Name of Course</i>	<i>I</i>	<i>II</i>	<i>III</i>
English 101-02-03	3	3	3	Psychology			
Biology 111-12-13	4	4	4	221-22-23	3	3	3
Mathematics				English 211-12-13	3	3	3
111, 112, 113	3	3	3	French or German	3	3	3
French or German	3	3	3	Sociology 211-12-13	3	3	3
History 121-22-23	3	3	3	Psychology 311	3		
Physical Education				Music and Art			
11-12-13	1	1	1	Appreciation		3	3
Air Science (men				Physical Education			
only) 151-52-53	1	1	1	20-50	1	1	1
				Air Science			
				251-52-53	1	1	1
Women	17	17	17	Women	16	16	16
Men	18	18	18	Men	17	17	17

<i>Junior Year</i>				<i>Senior Year</i>			
<i>Quarter</i>				<i>Quarter</i>			
<i>Name of Course</i>	<i>I</i>	<i>II</i>	<i>III</i>	<i>Name of Course</i>	<i>I</i>	<i>II</i>	<i>III</i>
Psychology 321-22-23	3	3	3	Psychology 411-12-13	3	3	3
Psychology 431-32-				Psychology 450-461-			
341	3	3	3	462	3	3	3
Electives	12	12	12	Psychology 481			3
				Electives	9	9	6
	18	18	18		15	15	15

**CURRICULUM FOR BACHELOR OF SCIENCE DEGREE
WITH A MAJOR IN PSYCHOLOGY**

(Without Teacher Certification)

Same as Curriculum for Bachelor of Arts Degree, with the exception of the Foreign Language requirement.

**CURRICULUM FOR BACHELOR OF SCIENCE DEGREE WITH
A MAJOR IN PSYCHOLOGY**

(With Teacher Certification)

<i>Freshman Year</i>				<i>Sophomore Year</i>			
<i>Quarter</i>				<i>Quarter</i>			
<i>Name of Course</i>	<i>I</i>	<i>II</i>	<i>III</i>	<i>Name of Course</i>	<i>I</i>	<i>II</i>	<i>III</i>
English 101-02-03	3	3	3	Psychology 221-22-23	3	3	3
Biology 101-02-03	4	4	4	English 211-12-13	3	3	3
Mathematics				Sociology 221-22-23	3	3	3
111, 112, 113	3	3	3	Psychology			
History 121-22-23	3	3	3	311-242-243	3	3	3
Music and Art				Education 201	3		
Appreciation	3	3		Psychology 312		3	
Electives in Area of				Electives (Area of			
Certification			3	Certification)			3
Physical Education				Physical Education			
11-12-13	1	1	1	20-50	1	1	1
Air Science (men only)	1	1	1	Air Science			
				(men only)	1	1	1
Women	17	17	17	Women	16	16	16
Men	18	18	18	Men	17	17	17

<i>Junior Year</i>				<i>Senior Year</i>			
<i>Quarter</i>				<i>Quarter</i>			
<i>Name of Course</i>	<i>I</i>	<i>II</i>	<i>III</i>	<i>Name of Course</i>	<i>I</i>	<i>II</i>	<i>III</i>
Psychology				Psychology			
321-22-23	3	3	3	411-12-13	3	3	3
Psychology				Psychology 450	3		
431-32-341	3	3	3	Education 471-462	3	3	
Education				Psychology 463	3		
301-387-371	3	3	3	Electives	6	12	
Psychology 461-62		3	3	Student Teaching			
Electives in area of				Ed. 472s			9
Certification	9	6	6				
	18	18	18		18	18	12

Psychology Courses Recommended for Education Students

Psychology courses included in the "Core Program of Professional Education," and required for teacher certification in the State of Tennessee:

Educational Psychology I, Human Development, 242
Educational Psychology II, Psychology of Learning, 243
Measurement and Evaluation, 312
Guidance for Classroom Teachers, 463

Psychology courses which may be used for education credit, but which are not included in the Core Program of Professional Education, and are not required for certification in Tennessee: (These courses may not be substituted for Core Professional courses for certification in Tennessee.)

General Psychology, 221-22
Child Psychology, 253
Adolescent Psychology, 263
Mental Hygiene, 323

Sequence of Courses

Non-Credit Courses

Orientation, 100 (Majors only)
Remedial Reading, 101
How to Study, 102

Undergraduate Courses

General Psychology, 221-22-23
Educational Psychology I, Human Development, 242
Educational Psychology II, Psychology of Learning, 243
Child Psychology, 253
Adolescent Psychology, 263
Elementary Statistics, 311
Measurement and Evaluation, 312
Abnormal Psychology, 321-22
Mental Hygiene, 323
Social Psychology, 341
Machine Scoring of Tests, 400
Experimental Psychology, 411-12-13
Physiological Psychology, 431-32
Senior Project, 450
Differential Psychology, 461
Introduction to Psychological Testing, 462
Guidance for Classroom Teachers, 463
History and Schools of Psychology, 481

100. *Orientation for Psychology Majors.* (0) General college orientation and introduction to the area of psychology as a profession. Student given the opportunity to discover his own abilities, aptitudes, interests, reading level, and study habits. Non-credit course.

101. *Remedial Reading*. (0) Designed to give the student an opportunity to diagnose and correct reading deficiency. Special attention to increasing speed and comprehension. Non-credit course.

102. *How to Study*. (0) Offers training in developing desirable study habits. Non-credit course.

221-22. *General Psychology*. (6 Hrs.) The basic course in general psychology; designed to acquaint the student with the fundamental principles of human behavior and experience, the scope of psychology, and the methods of psychological research. Course is a prerequisite for all "advanced" courses in psychology; is required of all students majoring or minoring in psychology, and is recommended for students in education.

223. *General Psychology*. (3) Prerequisite Psych. 221-22. Required of psychology majors, and open as an elective to non-majors who desire to further explore the content and nature of general psychology. Offers a critical consideration of psychological systems, and methodology, and a review of the fields of psychology.

242. *Educational Psychology I, Human Development*. (3) The first in a sequence of two courses in educational psychology. Designed to give the student an understanding of the child as a growing organism, of how behavior is acquired, and the relationship between growth and learning. Required in the Professional Education Core.

243. *Educational Psychology II, Psychology of Learning*. (3) Prerequisite Psych. 242. The second in a sequence of two courses in educational psychology. Designed to introduce the student to learning theory and the implications of learning theory for classroom teaching, and to give the student training in the application of psychological principles to the various functions of the school. Required in the Professional Education Core.

253. *Child Psychology*. (3) Emphasis on the physical, emotional, social, and mental growth of the child from infancy to puberty; attention given to the behavior characteristics of children at various levels of growth, and to psychological factors which influence behavior. (Students may not receive credit for both Psy. 242 and Psych. 253.)

263. *Adolescent Psychology*. (3) Emphasis on the development of and the problems of adolescents in the home, school, and community environment. Attention given to the guidance of adolescents. (Students may not receive credit for both Psych. 242 and Psych. 263.)

311. *Elementary Statistics*. (3) Offers training in tabulating and processing scores and other data; covers measures of central tendency, measures of variability, the normal curve, and simple correlation.

312. *Measurement and Evaluation in Public Schools*. (3) Offers training in administering, scoring, processing, and using the results of standardized tests and other measures of progress in public schools; also training is offered in the construction of objective tests. Prerequisite Psych. 242 and 243. Required in the Professional Education Core.

321-22. *Abnormal Psychology*. (6) Lectures, discussions, and review of case studies concerning the nature, causes, and treatment of pathological behavior. Observation trips shall be made to institutions for the care and treatment of mental patients.

323. *Mental Hygiene*. (3) Primarily concerned with examining and interpreting procedures for protecting and preserving the mental health of the individual through wholesome adjustment to the environment; attention is given to the practice of mental hygiene in the classroom.

341. *Social Psychology*. (3) Lectures and discussions of social behavior and application of principles of psychology to social behavior.

401. *Machine Scoring of Tests*. (1) Offers training in scoring tests on an I.B.M. machine. One hour practice per day required. Prerequisite: course in testing, junior classification, and approval of instructor.

411-12-13. *Experimental Psychology*. (9) Offers training in applying the scientific procedure of experimentation to the study of psychological phenomena in the various fields of psychology.

431-32. *Physiological Psychology*. (6) A study of the sensory, motor, and adjustor (brain) mechanisms as they relate to behavior.

450. *Senior Project*. (3) Required of all seniors. Under the supervision of the student's adviser, each senior shall complete a project appropriate to the student's major area. The completed project must be approved by the student's adviser and the head of the department. Three typewritten copies of the project are to be turned in before a grade is awarded. One copy will be returned to the student.

461. *Differential Psychology*. (3) An intensive study of individual differences, with emphasis on discovery, measurement, and interpretation.

462. *Introduction to Psychological Testing*. (3) Designed to give the student an understanding of the basic principles underlying psychological measures; officers training in selection and use of psychological tests, and practice in both group and individual testing.

463. *Guidance for Classroom Teachers*. (3) Designed to train classroom teachers in providing guidance to their pupils. Attention is given to the functions, techniques, and tools of guidance, and to the organization and execution of guidance programs. Required in the Professional Education Core.

481. *History and Schools of Psychology*. (3) Special attention to the historical development of psychology as a science, and to the fundamental concepts of the various schools of psychology.

Faculty:

Department of Architectural Engineering

Ronald Harris, Leon Q. Jackson, and Harry E. Lash.

Department of Civil Engineering

Warren A. Coolidge, Macon G. Hinton, Napoleon Johnson, and Robert S. Armstead.

Department of Electrical Engineering

Fred W. Bright, Jack W. Breed, Paul Dicker, Andrew Ewing, and Carl Manuel.

Department of Mechanical Engineering

Yvonne Y. Clark, Clarence H. C. James, Clinton E. Jones, James A. Parsons, Jr., and J. W. Reynolds.

Department of Industrial Education

Leon C. Farbes, William V. Harper, Gilbert K. Pleasant, Cecil Ryan, Preston E. Stewart, Thomas Pratt, Sr., Thomas Pratt, Jr., and L. Williams.

SCHOOL OF ENGINEERING

NAPOLEON JOHNSON, M.S.E., *Dean*

GENERAL INFORMATION

The School of Engineering is divided into two articulated components of technical education, namely:

1. A Bachelor of Science Degree program with curricula in Architectural, Civil, Electrical and Mechanical Engineering. Electrical Engineering is offered under two options of power and communications and Mechanical Engineering with a choice of power or metallurgy options.
2. An Industrial Education Program with teacher training curricula in Industrial Arts Education and Aviation Education both of which lead to the Bachelor of Science Degree.

The aim of the School of Engineering is to train students rigorously and thoroughly on a broad basis of a coherently related sequence of subjects in three major fields: physical science and mathematics; social-humanistics; and the respective professional or vocational disciplines. To these ends, the instructional facilities of the School of Arts and Sciences and the School of Education are available to the students of the Engineering School. Out of such programs graduates will possess also the general education for a well-rounded and wholesome life in their communities.

The School of Engineering offers in cooperation with the several schools of the University, undergraduate courses of study, normally four years (i.e. twelve quarters of twelve weeks each) in length, leading to the Bachelor of Science degree in Architectural Engineering, Civil, Electrical, Mechanical, Metallurgical Engineering and Industrial Education.

The School may revise from time to time any of its curricula in order to conform with technological advancement or for purposes of accreditation. All students must satisfactorily complete the prescribed courses under their curriculum in order to qualify for the Bachelor of Science degree.

The School of Engineering of Tennessee A & I State University is located in the greatest area of industrial expansion in the Southeast. It is within two hundred miles of the Tennessee Valley Authority and the Atomic Energy Commission's Oak Ridge Plant; near the foundry and steel mills of Middle Tennessee and Alabama and in the midst of the largest source of hydro-electric power in the East. In Nashville, unusual opportunities for first-hand study of foundries, waterworks, large construction projects and other similar engineering enterprises are on hand; together with engineering organization to provide field instruction.

The school of Engineering has a physical plant of over one and one-half million dollars consisting of:

1. Engineering Building—In this building are located the foundry, electrical, physical testing, cement and soils, combustion engines, refrigeration and air-conditioning, hydraulics, model-making laboratories, three drafting rooms; classrooms and reading rooms; and offices.
2. Industrial Arts Building—In this building are located the machine, welding, sheet metal, refrigeration, household appliance vocational technical training shops. The building is fully equipped with lathes, milling machines, sheet metal and welding machines.
3. The Vocational Shop Building—The masonry, printing and auto mechanics areas are located in this building.
4. Mechanical Engineering and Heating Building—This building houses the steam engineering laboratories and contains a packaged Westinghouse Turbine-Electric Generating Unit; and a horizontal steam engine with indicator and prony brake.
5. Cumberland Airport—Equipment consists of testing and flight training facilities including aircraft, link trainer, jet and reciprocating engines.

COURSES IN ENGINEERING

The following core courses in general are offered in all degree programs.
Engineering Orientation

Offered by the Faculty of the individual departments

101. *Engineering Orientation*. (3) An introduction to the engineering profession. A survey of the methods of improving study habits. The use of the slide rule for the solution of engineering problems. Instruction in the techniques of the solution and presentation of engineering problems.

Engineering Mechanics

Offered by the Faculty of Department of Civil Engineering

202. *Analytical Mechanics Statics*. (5) The theory of analytical mechanics and the principles of statics. Instruction given in force system, equilibrium, centroids, center of gravity, friction, and moment of inertia. Prerequisites: Math 262; Physics 221.

203. *Analytical Mechanics Dynamics*. (5) Instruction in principles of kinetics and Kinematics. Includes the theory of rectilinear, curvilinear and rotary motion, impact stresses, and impulse and momentum. Prerequisites: Eng. 202; Math 263.

311-12. *Fluid Mechanics*. (6) Fundamentals of fluid behavior. It deals with the properties of fluids; theory of hydrostatics; basic principles of fluid flow and measurements, study of applied flow in pipes, open channels; and water power machinery. Prerequisite: Engr. 202, 203.

341-2. *Strength of Materials*. (6) Stress and strain, direct and shearing stresses, torsion and bending, riveted and welded joints, short column, tension members, shafts and beams, deflection, statically indeterminate beams, combined stresses, column theory, non-homogeneous beams. Prerequisites: Eng. 203, Physics. 221, Math. 261-62.

401. *Materials Testing*. (3) Testing properties of wood, metal and refractory products; control of concrete mixtures; instruction in field tests for determining quality of cement; analysis of and fine aggregates. Prerequisites: Eng. 342. One lecture and four laboratory periods.

Engineering Surveying

123. *Elementary Surveying*. (3) An elementary and basic course in the theory of plane surveying. Emphasis will be placed on the development of the following skills: The ability to locate and set machinery, to lay out buildings, knowledge of the theory of errors. Prerequisite: Math. 162. A technical knowledge of surveying instruments and a two field periods.

Engineering Drawing

Offered by Faculty of Department of Architectural Engineering

111. *Engineering Drawing*. (3) Instruction in the use of drawing instruments, freehand lettering and technical sketching, orthographic projection and auxiliary views. Required of all engineering and industrial education students. Prerequisite: Plane Geometry. Six laboratory periods.

112. *Engineering Drawing*. (3) Sections and dimensions practice, pictorial representation, freehand lettering and technical sketching. Required of all engineering and industrial education students. Prerequisite: Engineering 111 or equivalent. Six laboratory periods.

113. *Engineering Drawing*. (3) Representation of screw threads, fasteners, springs, gears, pipe drawing. Working drawings of machine parts. Freehand lettering and technical sketching. Required of all engineering and industrial education students. Prerequisite: Engineering 112 or equivalent. Six laboratory periods.

211. *Descriptive Geometry*. (3) An elementary study of the point, line and plane, with theoretical and practical problems. Six laboratory periods. Required of all mechanical, architectural and civil engineering students. Prerequisite: Engineering 113.

212. *Descriptive Geometry*. (3) Curved surfaces, their tangent lines and planes; the intersection of surfaces, developments, shades and shadows, per-

spective. Required of all civil, mechanical and architectural engineering students. Prerequisite: Engineering 211. Six laboratory periods.

Engineering Metallurgy

Offered by Faculty of Department of Mechanical Engineering (Metallurgy Option)

223. *Fundamentals of Physical Metallurgy*. (3) An introductory course based upon the physics of the metallic state. The internal structure of metals and its influence upon the attendant properties, phase equilibria and transformations in the solid state are emphasized. Prerequisites: Chem. 113, Physics 222.

Engineering Thermodynamics

Offered by Faculty of Department of Mechanical Engineering

301. *Elementary Thermodynamics*. (3) Thorough treatment of the laws of heat; transformation of energy, theoretical limitations; second law, absolute temperature, entropy and available energy; properties of gases, liquids, vapors and vapor mixtures. Prerequisites: Math. 261-2-3.

Engineering Law

Offered by Faculty of Department of Civil Engineering.

463. *Engineering Law*. (3) Emphasis upon negotiable instruments; real property; contracts; riparian rights and condemnation proceedings; writing and interpretation specification. Three lecture periods.

DEPARTMENT OF ARCHITECTURAL ENGINEERING

L. QUINCY JACKSON, M.S., *Head*

The Department of Architectural Engineering offers a course of study leading toward a professional degree. Courses are designed to develop technical knowledge and insight into architecture in order to meet the highest professional standards. The primary objective is to encourage the student to investigate the fundamental principles of organic order and to develop individually a medium of controlling architectural forms for man's protection and accommodation.

Unusual opportunities are available through close contact with the many other engineering courses and research programs offered by the school. The architectural engineering curriculum integrates these technical resources with social and cultural needs.

The graduate will find many opportunities for employment with private firms, industrial establishments or governmental agencies. With additional years of experience the graduate architectural engineer may engage in private business after meeting registration requirements of the state in which he desires to practice. Minimum quarter hours required for Bachelor of Science degree in Architectural Engineering are 237.

CURRICULUM IN ARCHITECTURAL ENGINEERING

Freshman Year				Sophomore Year			
Name of Course	Quarter			Name of Course	Quarter		
	Hours	Credit			Hours	Credit	
Math. 161-62-63	I	II	III	Math. 261-62-63	I	II	III
Eng. 101-2-3	5	5	5	English 211	5	5	5
Chem. 111-12-13	3	3	3	Physics 221-22-23	3		
Engr. 101	4	4	4	Engr. 202	4	4	4
Engr. 111-12-13	3			Arch. Engr. 201-2-3	5	5	5
Engr. 123	3	3	3	Engr. 211-12	4	3	4
Speech 202			3	Air Science II	3	3	
Phy. Ed. 11-12-13	1	1	1	Phy. Ed. 20's to 50's	1	1	1
Air Science I	1	1	1		1	1	1
Men	20	20	20	Men	21	22	20
Women	19	19	19	Women	20	21	19

Junior Year				Senior Year			
Quarter Hours Credit				Quarter Hours Credit			
Name of Course	I	II	III	Name of Course	I	II	III
Arch. Engr. 301-2-3 ...	3	3	3	Arch. Engr. 401-2-3 ...	4	4	4
Arch. Engr. 311-12-13..	2	2	2	Arch. Engr. 411	2		
Arch. Engr. 322		4		Arch. Engr. 422		2	
Arch. Engr. 332		2		Arch. Engr. 433			4
Arch. Engr. 333			3	Arch. Engr. 443			4
Civil Engr. 301-3	3		3	Arch. Engr. 452		4	
Civil Engr. 441-42	3	3		Arch. Engr. 463			4
Engr. 341-42	3	3		Civil Engr. 431	5		
Engr. 223			3	Civil Engr. 451-52	3	3	
Engr. 463			3	Elect. Engr. 301-2	3	3	
Electives		3	3	Engr. 401	3		
Arch. Engr. 213	2			Electives		3	3
	16	20	20		20	19	19

COURSES IN ARCHITECTURAL ENGINEERING

201. *Architectural Design II Small Structures.* (4) Introduction to architectural design; expressions of principles, in structural and aesthetic relationship. Prerequisites: Engr. 101-2-3. Three three-hour laboratory periods per week.

202. *Architectural Design II Small Structures.* (3) Problems of more complex nature involving principles, materials, space concepts and site relationship. Prerequisites: Arch. Engr. 201. Four two-hour laboratory periods per week.

203. *Architectural Design II Intermediate Design.* (3) Design of small structures. Problems emphasizing design and the use of materials in the development of creative activity. Prerequisites: Arch. Engr. 201-202. Three two-hour laboratory periods per week.

213. *Engineering Materials.* (2) Prefabricated building materials, manufacturing processes, characteristics of new and old materials; emphasis on relationships between common use of materials and imagination; techniques directed toward limitations and potentialities. Prerequisites: Arch. Engr. 202. Three two-hour laboratory periods per week.

301-2-3. *Architectural Design III Composition.* (9) The design of architectural problems of a complex nature involving principles of organic order and the use of structural elements site relationship, form and logical concepts. Relation of design concepts to space and the process of architectural composition. Problems in planning with close co-ordination of site, materials, human needs and structural harmony. Prerequisites: Arch. Engr. 203-213. Three-three hour laboratory periods per week.

311-12-13. *History of Architecture.* (6) Materials and forms of Architecture and related arts of the past and of the present, including emphasis on social, religious and political life. Prerequisites: Arch. Engr. 202-213.

322. *Working Drawings.* (4) Development of various techniques in drafting, representing materials and methods. Elementary construction drawing for small buildings and furnishings. Prerequisite: Arch. Engr. 301. Four-two hour laboratory periods per week.

332. *Sanitation.* (2) Elements of engineering investigation and reports involving the design and installation of hot and cold water systems for domestic and commercial use. Local and national codes. Selection of fixtures, private water supply and disposal systems. Prerequisites: Arch. Engr. 203, Physics 223. One hour lecture and two two-hour laboratory periods per week.

333. *Architectural Construction.* (3) Methods of building construction and the assembly and use of building materials. Studies on building types old and new. Prerequisite: Arch. Engr. 213.

401. *Architectural Design IV Planning.* (4) A continuation of Architectural Engr. 303, principles applied in a series of more complex problems; each problem presented on a design need covering the whole field of architectural procedures.

Prerequisites: Arch. Engr. 303, 321-22-12. Five-two hour laboratory periods per week.

402. *Architectural Design Planning.* (4) For completion of senior standards of Architectural Engineering this course is continued by course 403. All seniors are given practical problems within the community, having an actual site and having to meet requirements given by the faculty and concerned persons outside the university. Prerequisites: Arch. Engr. 322, 401. Five two-hour laboratory periods per week.

403. *Architectural Design—Advanced Planning.* (4) Continuation of Architectural Design 402. One single problem guided by the faculty; working drawings, specifications and contracts will be presented to the consultants upon presenting final completed problem. Prerequisites: Arch. Engr. 321-22-411. Five-two hour laboratory periods per week.

411. *Estimating and Supervision.* (2) Estimating construction cost for the building trades; methods and procedures in the supervision of building construction. Prerequisites: Arch. Engr. 333.

422. *Specifications.* (2) Writing of architectural specifications and specification documents; duties and responsibilities of the architect from a professional standpoint.

433. *Professional Practice.* (4) Principles on the proper performances of the duties of an architect, ethical, moral and legal responsibilities; requirements for proper types of contracts and the architect's responsibility in the community. Requirement for registration. Prerequisites: Arch. Engr. 303, Civil Engr. 303. One lecture period per week.

443. *Building Equipment.* (4) The selection, use and design of and mechanical equipment for buildings; problems involving cost, maintenance and purchasing of standard and custom design equipment.

452. *Heating and Air-conditioning.* (4) Design and layout of heating and air conditioning systems, (hot water, steam warm air, radiant, electrical and solar), basic principles in determining heat gain and heat losses in structures, selection and use of equipment for year-round conditioning. Prerequisite: Physics 223.

463. *Electrical Applications in Buildings.* (4) Electrical lighting, equipment and circuit design in modern buildings. Prerequisite: Elect. Engr. 301-2.

DEPARTMENT OF CIVIL ENGINEERING

ROBERT S. ARMSTEAD, B.S., Head

The oldest branch of the engineering profession, civil engineering is concerned primarily with the planning, design and construction of the permanent works of modern industrial and urban life, such as transportation routes, water supply and power developments, sewage, irrigation, bridges, tunnels, airports and other structures. Dealing, as he does, with both the forces of nature and with projects that influence the economic and social conditions of many people, the Civil Engineer must combine fundamental knowledge of science and engineering with experience and judgment, and with personal characteristics of the highest order.

The curriculum in Civil Engineering is arranged so that all students receive training in the basic principles of mathematics and science and in engineering applications such as surveying, engineering geology and structural theory and design.

The curriculum in Civil Engineering leads to the degree of Bachelor of Science in Civil Engineering upon the completion of a minimum of 231 quarter hours.

CURRICULUM IN CIVIL ENGINEERING

Freshman Year				Sophomore Year			
Quarter				Quarter			
Name of Course	I	II	III	Name of Course	I	II	III
Math. 161-62-63	5	5	5	Math. 261-62-63	5	5	5
English 101-02-03	3	3	3	English 211	3		
Chemistry 111-12-13	4	4	4	Speech 203			3
Engineering 111-12-13	3	3	3	Physics 221-22-23	4	4	4
Speech 202		3		Engineering 202-03		5	5
Engineering 123			3	Engineering 211-12	3	3	
Engineering 101	3			Non-Tech. Elective	3		
Air Science I	1	1	1	Air Science II	1	1	1
Phy. Ed. 11-12-13	1	1	1	Phy. Ed. 20's to 50's	1	1	1
Men	20	20	20	Men	20	19	19
Women	19	19	19	Women	19	18	18

Junior Year				Senior Year			
Quarter				Quarter			
Name of Course	I	II	III	Name of Course	I	II	III
Civil Engr. 301-2-3	3	3	3	Civil Engr. 402		5	
Engineering 311-12	3	3		Civil Engr. 421-22	3	3	
Civil Engr. 313			3	Civil Engr. 431-32-33	5	1	3
Engineering 341-42	3	3		Civil Engr. 441-42-43	3	3	3
Economics 211			3	Civil Engr. 451-52-53	3	3	3
Engineering 223			3	Civil Engr. 450			3
Elect. Engr. 301-2-3	3	3	3	Engr. 463			3
Engineering 301	3			Math. 462-63	3	3	
Civil Engr. 321-22	3	3		Engineering 401	3		
Civil Engr. 333			3	Sociology 301			3
Non-Tech. Elective		3					
	18	18	18		20	18	18

Summer I

Name of Course	Qr. Hrs. Credit
CE 300	3

COURSES IN CIVIL ENGINEERING

CE 300. *Summer Field Practice.* (3) Mapping plane table, Transit and Stadia. Layout of circular curves, adjustment of instruments. Determination of the true meridian. (4) weeks. Soil surveys, visual identification of soils, field density test, subsurface explorations and permeability tests (2) weeks.

301. *Theory of Structures.* (3) Analysis of stresses due to fixed loads on statically determinate structures. Application of shear and moment diagrams to beams, columns and girders. Prerequisites: Physics 221, Math. 261.

302. *Theory of Structures II.* (3) Analysis of stresses due to movable loads on statically determinate structures. Application of principles of highway and railroad moving load diagrams; use of shear and moment influence lines in the design of bridges. Prerequisite: C. E. 301.

303. *Theory of Structures III.* (3) Application of elastic theory, moment distribution and method of least work in the application of elastic theory in the analysis of statically indeterminate structures. Prerequisite: C. E. 301-2.

313. *Hydraulics.* (3) Fundamentals of fluid behavior. It deals with the properties of fluids; theory of hydrostatics; basic principles of fluid flow and measurements, study of applied flow in pipes, open channels; and water power machinery. Prerequisite: C.E. 203,301. One lecture and two laboratory periods.

CE 321. *Advanced Surveying.* (3) Computation latitudes and departures

closure of traverses, computation of land areas, field astronomy, principles of photogrammetry. Prerequisite: Engr. 123.

CE 322. *Route Surveying.* (3) Curves and earthwork problems with application to heavy construction; practice in establishing line and grade for highways, railways, sewers, water and steam distribution lines and other underground utilities; setting slope stakes; and erection of batter boards. Prerequisites: Engr. 123.

CE 333. *Engineering Geology.* (3) Application of the principles of geology to the practice of Civil Engineering. Study of the formation of soils and investigation of the properties of rocks and minerals.

402. *Transportation Engineering.* (5) An introductory course in transportation that emphasizes principles of movement. It embraces principles common to all modes of transportation which when applied in detail determine the utility, cost, operation and design of each mode. Prerequisites: CE 321-333-431.

402. *Transportation Engineering.* (5) Roads and pavements, Airport Engineering, Railroad Engineering, Pipe Transportation Rivers and Coastal Engineering Belt Conveyors. Prerequisites: Civil Engr. 211, 333, 431.

421. *Waterworks and Sewerage I.* (3) Elements of the processes governing the depletion and replenishment of the water resources of the land areas of the earth. Prerequisites: C. E. 313.

422. *Waterworks and Sewerage II.* (3) Theory and Design of the collection, purification and distribution of public water supplies. Prerequisite: C. E. 421. Three lecture periods and field trip.

431. *Basic Soils Engineering.* (5) Principles of Soils Mechanics as applied to design of foundations for buildings, highways and bridges. Theory of consolidation. Lateral Earth pressure. Theory of pressure distribution. Soil stabilization. Prerequisites: Engr. 342. C. E. 333.

CE 432. *Soils Laboratory.* (1) Laboratory tests to determine shearing resistance, un-confined compression, atterberg limits, maximum density grain size analysis and consolidation. Prerequisites: C.E. 431.

433. *Advanced Soils Engineering.* (3) Design of dry and sub-aqueous foundations, such as piers, footings, abutments; principles and practices in piling and underpinning; and application of soil mechanics to designing of foundations. Prerequisite: C. E. 432.

441. *Structural Design—Timber.* (3) Design of frame structures, such as mill buildings, trusses, and bridges; use of T E C O connectors in laminated trusses; and beam and girder construction. Prerequisites: C. E. 301, Engr. 343. One lecture and four laboratory periods.

442. *Structural Design—Steel I.* (3) Design of steel building frames and grillage footings. Prerequisites: C. E. 301. Engr. 343. Two lectures and two laboratory periods.

443. *Structural Design—Steel II.* (3) Design of steel roofs and bridge trusses; plate girders and built-up columns and main compression members. Prerequisite: C. E. 442. Two lectures and two laboratory periods.

450. *Senior Project.* (3) All seniors are required to select and execute a project under the supervision of their major adviser to be approved by the chairman of the school. It may involve the design and making of a project complete with drawings, pictures, specification and detail data involved in its construction; or, a research and compilation of a subject within the field of the student's interest.

451. *Structural Design—Concrete I.* (3) Design of concrete beams and girder structures; concrete joist of metal pan and terra cotta construction. Two lectures and two laboratory periods.

452. *Structural Design—Concrete II.* (3) Design of flat slab structures; retaining walls; and bridges. Two lectures and two laboratory periods.

453. *Structural Design—Concrete III.* (3) Ultimate Design Theory. Prestress, Design Creep and Shrinkage. Three two-hour laboratory periods.

DEPARTMENT OF ELECTRICAL ENGINEERING

N. JOHNSON, Acting Head

The field of electrical engineering is very broad. It embraces the techniques and devices for the generation, transmission and use of electrical energy to supply light and power in the home, the shop and in industry. It includes the areas of radio, television and radar. It encompasses the new and rapidly developing areas of control, measurement and calculation where electronics has made possible the achievement of hitherto undreamed accuracy.

The graduate in electrical engineering is equipped to take his place as a junior engineer, with either industry or government in one or more of these areas of the profession. Here he will work under close supervision until he has acquired the experience requisite to the assumption of responsibility. His progress in the profession will depend to a large degree upon how well he has mastered his college courses and upon how assiduously he applies himself to his work. He is prepared to study at the graduate level in preparation for a career in research.

The minimum quarter hours required to receive the Bachelor of Science degree in Electrical Engineering are 236.

CURRICULUM IN ELECTRICAL ENGINEERING

Freshman Year				Sophomore Year			
Quarter				Quarter			
Name of Course	I	II	III	Name of Course	I	II	III
Mathematics				Mathematics			
161-62-63	5	5	5	261-62-63	5	5	5
English 101-02-03	3	3	3	Physics 221-22-23	4	4	4
Chemistry				English 211	3		
111-12-13	4	4	4	Elect. Engr.			
Engr. 111-12-13	3	3	3	211-12-13	3	3	2
Engr. 123			3	Elect. Engr. 311			3
Speech 202		3		Engineering 202-3		5	5
Engineering 101	3			Air Science II	1	1	1
Air Science I	1	1	1	Elect. Engr. 233			1
Phys. Ed. 11-12-13	1	1	1	Economics 211	3		
				Phys. Ed. 20's to 50's	1	1	1
Men	20	20	20	Men	20	19	22
Women	19	19	19	Women	19	18	21

POWER OPTION

Junior Year				Senior Year			
Quarter				Quarter			
Name of Course	I	II	III	Name of Course	I	II	III
Engineering 341-42	3	3		Elect. Engr. 411-12-13	3	3	3
Speech 203			3	Elect. Engr. 414-15-16	1	1	1
Elect. Engr. 363			3	Mech. Engr. 411-12-13	3	3	3
Elect. 321-22	1	1		Elect. Engr. 450			3
Elect. Engr. 383			1	Elect. Engr. 361-62	3	3	
Elect. Engr. 373			3	Elect. Engr. 372		1	
Elect. Engr. 351-52	3	3		Engr. 401	3		
Engr. 301	3			Economics 202		3	
Mech. Engr. 302		3		Engr. 463			3
Mathematics 462-63	3	3		Major electives	6	6	6
Engr. 223			3				
Engr. 311-12	3	3					
Physics 311-12-13	3	3	3				
Non Technical elective			3				
	19	19	19		19	20	19

COMMUNICATION OPTION

Junior Year				Senior Year			
Quarter				Quarter			
Name of Course	I	II	III	Name of Course	I	II	III
Engineering 342-43	3	3		Elect. Engr. 411-12-13	3	3	3
Speech 203			3	Elect. Engr. 421-22-23	2	2	2
Elect. Engr. 351-52	3	3		Elect. Engr. 431-32-33	2	2	2
Elect. Engr. 363			3	Elect. Engr. 450			3
Elect. Engr. 373			3	Elect. Engr. 451-52-53	3	3	3
Elect. Engr. 321-22	1	1		Elect. Engr. 461-62-63	1	1	1
Elect. Engr. 383			1	Elect. Engr. 471-73	3		3
Engr. 301	3			Elect. Engr. 482		3	
Mech. Engr. 302		3		Engr. 401	3		
Engr. 223			3	Economics 212		3	
Mathematics 462-63	3	3		Engr. Law 463			3
Physics 311-12-13	3	3	3	Engr. 311-12	3	3	
Elect. Engr. 361-62	3	3					
Elect. Engr. 372		1					
Economics 301			3				
	19	20	19		20	20	20

COURSES IN ELECTRICAL ENGINEERING

211-12-13. *Fundamentals of Electrical Engineering*. (8) Introduction to electrical theory, including electrical units, direct current circuits, magnetic circuits, induced and generated emf., circuits containing resistance, inductance and capacitance, and electrostatic and magnetostatic fields. Three hours per week the first two quarters and two hours per week the last quarter. Prerequisite: Mathematics 161-2-3.

233. *Direct Current Machinery Laboratory*. (1) Laboratory experiments paralleling the theory of Electrical Engineering 311, taken concurrently with 311. One laboratory period per week.

301-02-03. *Elements of Electrical Engineering*. (9) Direct and alternating current theory. Direct and alternating current generators and motors, transformer theory, the amplidyne and synchro. For non-majors, Prerequisite, Math 262; Physics 221-22-23. Three lecture periods and one laboratory period.

311. *Direct Current Machinery*. (3) Basic theory of generator and motor action; dynamo magnetization curve; armature windings and armature reaction; voltage characteristics. Direct current generator; generation and control of e.m.f.; performance characteristics of shunt and compound types; parallel operation. Direct current motor; counter e.m.f., speed and torque characteristics; starting, reversing and speed control; performance characteristics of series, shunt and compound types. Starters and controllers, losses and efficiency of generators and motors. Prerequisites: E. E. 211-12-13.

321-22. *Alternating Current Measurements Laboratory*. (2) Laboratory experiments paralleling the theory of 351. One two-hour laboratory period per week.

351-52. *Alternating Current Theory*. (6) Instantaneous and effective currents, voltage, power, complex numbers, vector algebra, series and parallel circuits, resonance, network theorems, circle diagrams, balanced and unbalanced polyphase circuits, fourier series, and non-sinusoidal voltages and currents. Introduction to Heaviside notation. Prerequisite: E. E. 211-12-13; Mathematics 263.

361-62. *Electronics*. (6) A study of electron ballistics, thermal and high field emission with application to cathode ray tubes and vacuum tubes. The Diode, the multi-element vacuum tube and the transistor. Rectifiers and amplifiers. Prerequisites: E. E. 351-52.

363. *Introduction to Electrical Transients*. (3) Direct and alternating current transients in electrical circuits. Spectrum coefficient calculations by

means of the fourier integral. Classical and transform solution of problems. Prerequisite: E. E. 352—Math. 462.

372. *Electronics Laboratory.* (1) A laboratory course taken concurrently with EE 362. Experimental determination of the operating characteristics of the diode, the triode, multi-element vacuum tubes and the transistor. One two-hour laboratory period per week.

373. *Electrical Networks.* (3) Kirchhoff's laws. Mesh and node analysis. Network Theorems. Symmetrical and Asymmetrical T and pi networks. Bridge circuits.

383. *Electrical Networks Laboratory.* (1) Laboratory experiments paralleling the theory of E. E. 373. One laboratory period per week.

411-12-13. *Alternating Current Machine Theory.* (9) Theory of the transformer, polyphase and single phase motors, synchronous motors, alternators and converters. Prerequisites: E. E. 233, 311, 351-52, 321-22.

461-62-63. *Alternating Current Machine Laboratory.* (3) Laboratory experiments paralleling the theory of E. E. 411-12-13. One two-hour laboratory period each. 461-62-63.

421-22-23. *Communication Engineering.* (6) A study of the principles of communication systems. The Fourier integral. Pole-zero method of circuit-behavior analysis. Resonance, infinite lines and reflection. Filters and equalizers. Impedance transformation and impedance matching by means of stubs. Modulation and demodulation.

431-2-3. *Communication Engineering Laboratory.* (6) Laboratory experiments paralleling the theory of E. E. 421-22-23. One four-hour laboratory per week.

441. *Power Transmission Lines.* (3) Inductance and capacitance of transmission lines. Long line equations. Steady state operation of transmission lines, circle diagrams of transmission lines.

442. *Electrical Power Networks.* (3) Solution of circuits by the methods of symmetrical components. Sequence impedances of power equipment. Determination of fault current in electrical systems.

443. *Power System Stability.* (3) The operation of power systems under abnormal conditions. Switching and lighting disturbances, transient stability, traveling waves and surge impedances.

444. *Electrical Machine Design.* (3) Principles of design of D C Machinery including complete design problems. Prerequisites: E. E. 231-352. Two one-hour lectures and one computation period.

445. *Electrical Machine Design.* (3) Principles of design of the transformer and induction motor including complete design problem. Prerequisites: E. E. 411-12. Two lecture periods and one computation period.

446. *Electrical Machine Design.* (3) Principles of design of A C Generators, synchronous converters, including complete design problem. Prerequisites: E. E. 411-12-13. Two one-hour lectures and one computation period.

450. *Senior Project.* (3) A technical paper on a special topic in Electrical Engineering. Prerequisites: Senior Standing.

451-2-3. *Ultrahigh Frequency Engineering.* (9) A general study of the techniques associated with ultrahigh frequency systems. Prerequisites: Math 462-63; E. E. 363.

471. *Industrial Electronics.* (3) Theory and operation of commercial industrial electronic equipment, with special reference to the practical applications. Three lecture periods.

473. *Fundamentals of Servomechanisms.* (3) A study of elementary control systems. Viscous and error-rate damping. Integral control. Transfer function analysis. Prerequisites: E E 363-472.

482. *Transistors.* (3) A study of the junction transistor. The following topics are treated: Transistor Physics; Semiconductor Characteristics; Transistor Linear Equivalent Circuits and Applications of the Junction Transistor.

DEPARTMENT OF MECHANICAL ENGINEERING

JAMES A. PARSONS, JR., E.E., *Head*

The mechanical engineer is concerned with the design, construction, selection, operation, and maintenance of machines, whether constituting running or stationary equipment. His services are thus involved directly or indirectly wherever machines or mechanical equipment are made or used. Engines and turbines together with their associated equipment for the generation of power by steam, hydro or internal-combustion processes in stationary or transportation services, are of particular concern to the mechanical engineer in the power field. Yet, while power generation is basic and important, it is essential to recognize the even greater field of power utilization for transportation as in ships, aircraft, rail and highway vehicles, as well as in transport and conveyor systems, and through the use of machine tools in modern manufacturing processes. The branches of mechanical engineering are, indeed older than the field of power generation. The mechanical engineer has always been concerned with production, wherever hand tools, machine tools or process equipment are employed. There are, thus, an almost limitless number of problems and opportunities in the better design, utilization, operation, and maintenance of such apparatus.

The young man entering engineering will find ample opportunity for the exercise of his best abilities not only in one of the above mentioned branches of the profession but also, if he prefers to follow them, in the operating, management, sales activities of industry. Minimum quarter hours required for Bachelor of Science degree in Mechanical Engineering are 238.

Metallurgical Engineering Option for Mechanical Engineers

Nine hours of physical metallurgy are required of all mechanical engineers. These include Fundamentals of Physical Metallurgy 211, Physical Metallurgy 322 and Metallography 333. In addition Mechanical engineers may elect twelve hours of mechanical metallurgy including Foundry Theory 313, Foundry Practice 323, Advanced Foundry Theory 451 and Advanced Foundry Practice 461. The option is completed with Application Metallurgy 413 and a senior project in Metallurgy 450. All courses in Mechanical Metallurgy are based upon Metal Processing designed to prepare engineers for the rapidly developing foundry industry. The Foundry Educational Foundation is encouraging engineering students to enter this branch of industry where opportunities for engineers capable of assuming supervisory positions are significant both in quantity and quality.

CURRICULUM IN MECHANICAL ENGINEERING

CURRICULUM IN MECHANICAL ENGINEERING									
Freshman Year		Quarter			Sophomore Year		Quarter		
		Hours Credit					Hours Credit		
Name of Course		I	II	III	Name of Course		I	II	III
Mathematics 161-2-3 ..		5	5	5	English 211		3		
English 101-2-3		3	3	3	Math. 261-62-63		5	5	5
Chemistry 111-12-13 ..		4	4	4	Physics 221-22-23		4	4	4
Engr. 111-12-13		3	3	3	Engr. 211-12		3	3	
Speech 202			3		Engr. 202-3			5	5
Engr. 123				3	Mech. Engr. 211-12 ...		3	3	
Engineering 101		3			Air Science II		1	1	1
Air Science I		1	1	1	Speech 203				3
Phys. Ed. 11-12-13		1	1	1	Phy. Ed. 20's to 50's...		1	1	1
					Engr. 223				3
Men		20	20	20	Men		20	22	21
Women		19	19	19	Women		19	21	21

* Mechanical Engineering majors may elect any two of the following shop courses: Foundry 101-2, Metal Bench Work 101, Sheet Metal 101-2.

Junior Year				Senior Year			
Quarter				Quarter			
Hours Credit				Hours Credit			
Name of Course	I	II	III	Name of Course	I	II	III
Engr. 341-42	3	3		Elect. Engr. 301-2-3	3	3	3
Economics 301			3	Civil Engr. 301	3		
Engr. 301	3			Mech. Engr. 452-53		3	3
Mech. Engr. 302-3		3	3	Mech. Engr. 411-12-13	3	3	3
Mech. Engr. 311			3	Mech. Engr. 401-32-42	3	3	3
Met. Engr. 321	3			Mech. Engr. 450			3
Engr. 311-12	3	3		Engr. 463			3
Mech. Engr. 341-42-43	3	3	3	Electives	3	6	3
Math. 462	3			Engr. 401	3		
Electives		3					
Fuels and Lubricants							
403			3				
Met. Engr. 333			3				
Economics 201-2	3	3					
	21	18	18		18	18	21

COURSES IN MECHANICAL ENGINEERING

211. *Manufacturing Processes-Metal Fabrication.* (3) Pattern Making, pattern design and materials. Fundamental principles underlying manufacturing processes in the area of casting. Classroom discussion and demonstration.

212. *Manufacturing Processes-Metal Fabrication.* (3) Fundamental Principles underlying manufacturing processes in the area of machine tools. Classroom discussion and demonstration.

302. *Thermodynamics.* (3) Energy relations of one-dimensional steady flow of compressible fluids applied to the DeLaval nozzle, simple orifice, and long pipe, simple single-stage impulse turbine; ideal power cycles; thermodynamics and processes of moist air; and other application. Prerequisite: Engr. 301.

303. *Thermodynamics.* (3) Application of principles of thermodynamics to selected problems of power production, heat transfer, fluid flow of a compressible medium, cycle analysis. Prerequisite: Mech. Engr. 302.

311. *Heat Power Engineering.* (3) A study of the principles involved in the utilization of heat in the steam boiler, steam turbine, and power plant auxiliaries; theory of heat transfer; fuels and combustion. Prerequisites: Math. 261-2-3. M. E. 302.

341. *Kinematics.* (3) Analysis of mechanisms. A study of instantaneous centers, velocities, accelerations, and forces in plane mechanisms both analytical and graphical. Prerequisites: Math. 263, Engr. 212 and Engr. 203. One lecture period. Two laboratory periods.

342. *Machine Elements.* (3) A study of rolling and sliding contact including belts, chains, cams and tooth gearing in plain and epicyclic train. Introduction to the design of machine elements. Prerequisite: Mech. Eng. 341. One lecture period. Two laboratory periods.

343. *Machine Design.* (3) The design of machine parts including shafting, gears, brakes, clutches, bearings, (sliding and anti-friction), springs, flywheels and frames. Prerequisite: Mech. Eng. 342.

401. *Heat and Air Conditioning.* (3) Theory design and installation of hot air, direct and indirect steam, hot water and fan heating systems; central heating and temperature control; air distribution, humidity control and conditioning equipment. Prerequisite: M. E. 303.

403. *Fuels and Lubricants.* (3) Laboratory practice in the analysis of solid, liquid and gaseous fuels and flue gas, followed by a short boiler test; lubricating oil tests, such as fire, flash, carbon residue, viscosity, corrosion and specific gravity. One lecture and four laboratory periods. Fee \$5.00.

411. *Steam Engineering I.* (3) Study of steam boilers and turbines; (steam generators and prime movers with emphasis on the application of thermodynamic

principles). Operation and economics of power plants. Prerequisite: M. E. 311. One lecture and four laboratory periods.

412. *Steam Engineering II-Plant Design.* (3) A general plant layout is made for the equipment combination which will generate and distribute steam at the lowest cost for assigned conditions of load, location, type of fuel and other factors affecting design. Cost estimates required for alternate proposals; a term project. Six laboratory periods. Prerequisite ME 411.

413. *Steam Engineering III.* (3) Tests for determining the economy, efficiency, and operating characteristics of steam and gas engines, steam turbines, pumps, boilers and other plant equipment. Standard practice is followed the power test code of the American Society of Mechanical Engineers being used as a laboratory manual. Six laboratory periods. Prerequisite ME 412.

421. *Machine Design.* (3) The proportioning of machine elements by the application of mechanics and the principles of strength of materials modified by practical considerations, together with an elementary study of friction and lubrication. Prerequisite: M. E. 343. One lecture period. 2 Lab. periods.

422. *Machine Design.* (3) The actual design of a simple machine, including making of the necessary calculations, detail and assembly drawings. Prerequisite: M. E. 421.

432. *Refrigeration Engineering.* (3) An application of general thermodynamic theory to mechanical refrigeration and its commercial applications, including consideration of refrigerants and their properties, compounds and multiple effect compression and absorption systems, and recent developments. Prerequisite M. E. 401.

442. *Refrigeration Laboratory.* (3) Tests on refrigeration machinery; cooling towers, and air-conditioning equipment. Prerequisite: M. E. 432. Six laboratory periods.

450. *Senior Project.* (3) A written thesis on a project in the student's major field of study.

452. *Internal Combustion Engines.* (3) The study of spark ignition and compression ignition engines; combustion, detonation, carburetion and fuels. Prerequisite: M. E. 303. Three lecture periods.

453. *Internal Combustion Engines Laboratory.* (3) The testing of internal combustion engines; fuels and combustion products; brakes and dynamometers; lubricating oil tests. Prerequisite: M. E. 452. Three laboratory periods.

Note: Students choosing the metallurgy option in Mechanical Engineering may do so by devoting all electives in the junior and senior years to the following Metallurgical Engineering courses: 322, 421, 432, 442 and 443.

COURSES IN METALLURGICAL ENGINEERING

321. *Physical Metallurgy.* (3) Application of equilibrium diagrams to the physical and mechanical properties of metals and alloys and their heat treatment. Recrystallization and grain growth, a quick coordinated practical working understanding of the various types of steel with special application to engineering design is offered. Prerequisite: Met. Engr. 223.

322. *Metal Processing I.* (3) Principles and processes of foundry operations; foundry materials including sands, clays, fluxes and core binders, calcination, thixotropy and the mechanism of bonding. Principles of soil mechanics as applied to molding and core making. Prerequisite: Met. Engr. 321.

333. *Metallography.* (3) Microstructure of alloys, as related to composition, thermal history and mechanical properties. Preparation of specimens. Principles and use of the metallurgical microscope. Prerequisite: Met. Engr. 322. Two lectures and two laboratory periods.

421. *Metal Processing Lab. I.* (3) Testing of bonding material for foundry and core sands. Control of foundry sand mixtures. Melting, refining and alloying of aluminum and copper bearing alloys. Prerequisite: Met. Engr. 322. One lecture and four laboratory periods.

432. *Metal Processing II.* (3) Basic principles of solidification. The physics of gating and risering. Gases in liquid and solid metal, theory of hot tearing. Prerequisite: Met. Engr. 322.

442. *Metal Processing Lab. II.* (3) Electric melting practice. Induction furnace melting of low carbon stainless and tool steel, arc furnace melting and refining of carbon and alloy steels. Oxygen lance practice as applied to the production of low carbon stainless steel in the electric arc furnace. Prerequisite: Met. Engr. 432. One lecture and four laboratory periods. Laboratory fee \$5.00. (Formerly F. E. 461).

443. *Application Metallurgy.* (3) Selecting of Engineering alloys as a result of their ease of fabrication, resistance to high strength and toughness, wear and abrasion and other special physical and mechanical properties, alloy design, quality control and service behavior. Prerequisite: Met. Engr. 333.

450. *Senior Project.* (0) A written thesis on a project for Metallurgical Option majors. (formerly F. E. 450).

QUARTER HOUR DISTRIBUTION OF 300 AND 400 COURSES IN THE SCHOOL OF ENGINEERING

Department	Major 300 Courses	Non-Major 300 Courses	Major 400 Courses	Non-Major 400 Courses	Total
Engineering					
1. Architectural	34	9	37	12	92
2. Civil	27	21	44	6	98
3. Electrical Power Option..	25	30	45	9	109
Communications Option ..	25	30	45	9	109
4. Mechanical Power Option.	30	24	36	9	99
Metallurgy Option	36	24	36	9	105
5. Industrial Education					
Industrial Arts Edu- cational Curriculum	21	15	30	6	72
Aviation Education Curriculum	19	23	19	11	72

DEPARTMENT OF INDUSTRIAL EDUCATION

LEON C. FARBER, M.S., *Acting Head*

The Department of Industrial Education is designed to prepare young men and women for gainful occupation in Industrial Arts Education, Vocational-Industrial Education, and Aviation Education.

The department offers undergraduate courses which lead to the Bachelor of Science degree in Industrial Education.

As advances are made in industry, the department of Industrial Education will alter its curricula to meet industrial demands for an adequate program of Industrial Education instruction.

CURRICULUM IN INDUSTRIAL ARTS EDUCATION

The Industrial Arts Education Curriculum is designed to offer experiences which will prepare young men and women as teachers of Industrial Arts Education in elementary, junior high, and senior high schools; to prepare supervisors and coordinators of Industrial Arts programs; and, to provide experiences for all students who wish to develop an appreciation for and an understanding of the technological society in which they live.

Successful completion of this curriculum leads to the degree of Bachelor of Science and qualifies one to obtain a state teaching certificate in Industrial Arts.

The following requirements must be met by all majors in order to qualify for teacher certification in Industrial Arts:

1. The completion of a minimum of 72 Quarter hours credit in the Industrial Arts area including:

- 18 Quarter hours in Graphic Arts: Ind. Arts Drawing 111-112-113, General Printing 101-102-103.
- 9 Quarter hours of General Shop 101-102-103.
- 9 Quarter hours of Woodworking (Carpentry 101-102-103 and 401 or Woodworking 111-112-113.)
- 9 Quarter hours Electricity (301-302-303-401 or Electronics 101-102-103.
- 9 Quarter hours General Metals (Sheet Metal 101-102-103 or Machine Shop 101-102-103.)
- A choice of 9 Quarter hours 101-102-103 shop series in Metals, Radio, Masonry, Aero Mechanics.
- 3 Quarter hours of *Power and Transportation*.
- 6 Quarter hours of Art Appreciation and Design (Art 133-Industrial Arts 401.)
- 3 Quarter hours General Crafts (351).

CURRICULUM IN INDUSTRIAL ARTS EDUCATION

Freshman Year				Sophomore Year			
Quarter Hours Credit				Quarter Hours Credit			
Name of Course	I	II	III	Name of Course	I	II	III
English 101-2-3	3	3	3	English 211-12-13	3	3	3
Ind. Arts Draw 111-2-3 ..	3	3	3	Gen'l Print. 101-2-3 ...	3	3	3
Math. 111, 112, 113....	3	3	3	Soc. Stud. 111-12-13 ...	3	3	3
Health 151			3	Air Science 251-2-3 ...	1	1	1
Ind. Arts in Modern Ed. 121	2			Natural Science 121-22-23	4	4	4
Hist. of Ind. Art 122..		2		Phy. Ed. 20's-50's	1	1	1
Air Science 151-2-3 ...	1	1	1	Education 201	3		
Phil. of Ind. Arts 123..			2	Psychology 242-3		3	3
Phy. Ed. 11-12-13	1	1	1				
Art 133		3					
Gen'l Shop 101-2-3....	3	3	3				
Men	16	19	19	Men	18	18	18
Women	15	18	18	Women	17	17	17

Junior Year				Senior Year			
Quarter Hours Credit				Quarter Hours Credit			
Name of Course	I	II	III	Name of Course	I	II	III
Ed. 301-371-387	3	3	3	Ed. 462	3		
Psy. 312		3		Psy. 463	3		
Gen'l Elec. 301-2-3 ...	3	3	3	Gen'l Metals 101-2-3 ..	3	3	3
Gen'l Woods 111-2-3 ..	3	3	3	Ind. Ed. 450	3		
Soc. Stud. 114	3			Ind. Ed. 471-2-3	3	9	3
Foreign Lang. 100 Level	3	3	3	Gen'l Crafts 351	3		
Ind. Ed. 331-2		3	3	Power & Transporta- tion 354		3	
Health 212	3			Ind. Arts Design 401...			3
Phil 323			3	*Electives 300 & 400 Levels		3	6
	18	18	18		18	18	18

* Electives may be taken in courses listed below: Education 341; Sociology 221, Special Ed. 469-465; Ind. Ed. 410; General Crafts 353; Aero Mechanics.

COURSES IN INDUSTRIAL ARTS

101-2-3. *General Shop*. For Industrial Arts students only. General concepts, organization, and administration of the general shop. Instruction is offered in woods, metals, ceramics, plastics, leather, general electricity, household mechanics.

121. *Industrial Arts in Modern Education*. (2) History and development of Industrial Arts in general education.

122. *History of Industrial Education*. (2) History of the development of Industrial Education from its beginning to modern times.

123. *Philosophy of Industrial Arts Education*. (2) The philosophy of industrial arts in modern education.

351. *General Crafts*. (3) The application of the fundamental principles of design and construction of all types of crafts projects dealing with woods, metals, plastics, leather and ceramics.

352-353. *General Crafts*. (6) Continuation of general craft 351. Deals with the processes, principles, and techniques of construction in the use of metals, woods, leather, plastics and ceramics.

354. *Power and Transportation*. (3) History of power and transportation. Horse drawn vehicles. Internal combustion, engines, Marine Transportation, Aeronautics.

355-356. *Power and Transportation*. (6) Continuation of Power and Transportation 354. Using skillfully common hand tools and machine tools that are used in motor mechanics. Design and construction of Marine and Aircraft models. Assist in maintenance of various types of machines and engines.

473. *Seminar*. (3) A seminar for students who have completed their student teaching. Appraisal and evaluation of individual problems encountered in student-teaching. Furthering the knowledge and/or skills needed on an individual basis.

401. *Industrial Arts Design*. (3) The application of the fundamental principles of design and construction to all types of school shop projects. Working drawings are made of projects. Six combined lecture and laboratory periods.

COURSES IN INDUSTRIAL EDUCATION

201-2-3. *Basic Experience in Trade and Industrial Education*. (9) Effective methods of teaching and the use of specialized instructional aids and devices.

311. *History and Philosophy of Industrial Education*. (3) History and development of Industrial Education; social and economic reasons for present educational movements; types of modern industrial schools and courses; apprenticeship systems and training of workers in modern industry.

321-2-3. *Part-time Program in Diversified Occupations*. (9) Principles of organizing and promoting such programs, analyzing needs, preparing schedules of processes, selecting materials for related-subjects teaching, and carrying on supervised study and coordination.

331. *Shop Organization and Management*. (3) Securing equipment, making inventories and arranging for proper storage of materials, supplies and tools. Typical shop layouts, arrangements for tool rooms, stock rooms and storage facilities; keeping records and accounts. Personnel management of students and the organization of students' participation in shop management and safety.

332. *Instructional Aids*. (3) This course is designed to motivate and teach industrial education students to use, design and construct teaching aids for industrial classrooms and shops. Students are actually required to construct three-dimensional teaching aids.

333. *Materials and Methods for Shop and Related Subjects Teachers*. (3) Detailed study, combined with actual operation of each of the several standard types of projects, lesson planning for teaching specific units involving audio-visual aids; maintenance, and repair of projection equipment. The design and construction of models, static and dynamic selected for use in specific teaching units.

400. *Driver Education and Traffic Safety*. (3) Set up to teach the beginning driver to drive according to standards of the American Automobile Association. Six lecture and laboratory periods.

410. *Teaching, Methods in Driver Education and Traffic Safety*. (3) Designed to prepare teachers, administrators and supervisors of driver education. It involves practice in both class-room and behind-the-wheel phases of the program. Prerequisite: 400. Six lecture and laboratory periods.

411. *Foremanship Training by the Conference Method*. (3) The use of the conference as an instructional device; special methods, techniques, and procedures to be used in foreman training; duties and responsibilities of the typical industrial foreman. How to follow up foreman conferences by means of foremen's clubs, plant educational programs.

412-3. *Job Analysis*. (6) The principles of job analysis for the purpose of listing teaching content in trade and industrial education. Practice in analyzing trade jobs for production, auxiliary and related technical content; instructional difficulties and progression factors.

431-2. *Curriculum Building in Trade and Industrial Subjects*. (6) Arranging course material in trade subjects; following up results of job analyses, preparing checking sheets and individual job sheets in both trade and related subjects. Prerequisite: 412.

435-6-7. *Problems in Trade and Industrial Teaching*. (9) Individual or group work on assigned or chosen problems involving the preparation, use and evaluation of instructional material for use in vocational industrial classes. Research involving compilation and study of student records, employment placement, job progress, earning, wage scales and similar items may also be carried out.

450. *Senior Project*. (3) Each senior is required to select and execute a project under the supervision of his major advisor. It may involve the designing and making of a project complete with drawing, pictures, specifications and detail date involved in its construction; or a research and compilation of a subject within the field of the student's interest.

471. *Methods of Teaching Industrial Education*. (3) Lesson planning, techniques of the demonstration, plans for related instruction; and methods of testing are studied.

472. *Directed Teaching*. (9) This course provides an opportunity for each prospective industrial education teacher enrolled at this institution to engage in the actual observation and teaching of industrial education classes in the secondary schools in this state.

VOCATIONAL-INDUSTRIAL EDUCATION

(Building Construction)

The curriculum in building construction meets the needs of students who wish to acquire principles of light frame and small commercial building construction. Related work is given in planning, estimating, and the necessary related technical information concerning materials and processes of related trades. This curriculum gives basic information in management and business operation which enables students to obtain positions as construction supervisors and contractors after they have had a reasonable amount of practical experience. This curriculum also has a cooperative program which gives students practical experiences in actual building construction.

The curriculum in Vocational-Industrial Education, Building Construction, is designed for two purposes: (1) to train young men and adults to make a living by acquiring necessary skills and techniques for employment in industry; and, (2) to offer experiences which will provide Trade and Industrial teachers for the State of Tennessee after two years of journeyman experience.

Freshman Year				Sophomore Year			
Quarter				Quarter			
Name of Course	I	II	III	Name of Course	I	II	III
English 101, 2-3	3	3	3	English 211-12-13	3	3	3
Math. 111, 112, 113	3	3	3	Construction			
Health 151	3			Draw 221-22-23	3	3	3
Construction				Concrete and Masonry			
Draw 111-12-13	3	3	3	Construction 202-3-4	3	3	3
Carpentry 101-2-3	3	3	3	Social Studies			
Physical Ed. 11-12-13	1	1	1	111-12-13	3	3	3
Air Science 151-52-53	1	1	1	Physics 211-12-13	4	4	4
Typing 211-12-13	3	3	3	Air Science 251-52-53	1	1	1
				Physical Ed. 20's-50's	1	1	1
Men	20	17	17	Men	18	18	18
Women	19	16	16	Women	17	17	17
Junior Year				Senior Year			
Quarter				Quarter			
Name of Course	I	II	III	Name of Course	I	II	III
Education 201-2-3	3	3	3	Elem. Accounting			
Psychology 242-43,				211-12-13	3	3	3
312	3	3	3	Business Law			
*Advanced				323-24-25	3	3	3
Carpentry 401	3			Painting and			
Machine Equipment of				Finishing 402	3		
Building 312		3		Estimating 424	3		
Electricity 301-2-3	3	3	3	Foremanship Training			
Shop Org. and				by Conference			
Management 331			3	Meth. 411		3	
Job Analysis 312	3			Curriculum Bldg. in			
Material and Methods				Trade and Ind.			
for Shop Related				Subjects 431-2		3	3
Subjs, Teachers		3		Prob. of Trade and			
Health 212			3	Ind Teachers			
				435-6-7	3	3	3
	15	15	15		15	15	12

COURSES IN VOCATIONAL-INDUSTRIAL EDUCATION

Building Construction

Drawing

111. *Drawing*. (3) Instruction in the use of drafting tools, sketching in industrial design; orthographic, isometric, oblique and cabinet drawing as applied to industrial products.

112. *Drawing*. (3) Methods and systems of construction; their application in the design and erection of residences, and commercial structures; architectural detailing.

113. *Drawing*. (3) Continuation of 102.

221. *Construction Drawing*. (3) Study of modern house and small commercial buildings. Construction methods, application and use of present-day building materials through analysis and drawing; free hand drawing, details of carpentry and masonry construction, structural designing.

222. *Construction Drawing*. (3) Continuation of Construction Drawing 221.

223. *Construction Drawing*. (3) Specification and Estimating; Reading and interpreting blueprints; making complete sets of drawings; writing specifications and figuring costs.

* Summer internship to be arranged—course 472. It is taken during the summer of the Junior year for 12 credit hours.

A major will complete 207 hours for the Bachelor of Science degree in Building Construction.

Concrete and Masonry Construction

212. *Masonry Construction*. (3) The course deals with the use and care of tools; common materials and methods used in bricklaying; mortar making and spreading; laying straight walls using standard bonds; concrete footings, walls, piers, plain and reinforced mortars; laying out foundations; and excavating.

213. *Masonry Construction*. (3) Practice is given in building walls using various structural bonds; running veneer wall against block and frame backings; building construction work to include openings, arches, windows, doors, flues and vents.

214. *Masonry Construction*. (3) Practice is given in advanced brick and concrete work; laying fire brick; fireplace work; stone cutting and setting tile.

401. *Advanced Brick Construction*. (6) The study of construction of chimneys, mantels, special wall designs, arches and bonds. Prerequisite: 101. Twelve lecture and laboratory periods.

402. *Fundamentals of Plastering*. (6) The study of common materials; care and use of tools. Mixtures and application. Prerequisite: 101. Twelve lecture and laboratory periods.

403. *Fundamental Concrete Work, Cement Finishing*. (6) The study of materials, care and use of tools. Application of concrete mixtures, form building. Construction of foundation walls, walks and floors. Prerequisite: 101. Twelve lecture and laboratory periods.

Estimating

424. *Estimating*. (3) Practical examples in estimating costs of buildings; labor; and materials.

312. *Mechanical Equipment of Building*. (3) Fundamentals of plumbing and heating; installation of controls on gas, water, and steam systems; layout for plumbing, heating and ventilation; fixtures.

Painting and Finishing

402. *Painting and Finishing*. (3) Blending and matching colors, colors and pigments; and house painting and furniture refinishing.

Industrial Internship

472. *A cooperative venture between the University and industrial enterprises which provides actual on-the-job experiences for majors in the department*. (12) All students are required to take Industrial Internship at the end of the junior year. The head of the department of Industrial Education will approve all internships before students are permitted to enroll. Internship may be conducted in a commercial establishment or at Tennessee A. and I. State University. Efforts will be made to arrange with contracting agencies who cooperate in the industrial internship program to assist in financing subsistence needs of students. However, a student enrolled in Vocational-Industrial Education should arrange to finance himself during his internship.

CURRICULUM IN AVIATION EDUCATION

The curriculum in aviation education is designed to meet requirements of the Tennessee State Department of Education for certification as a public school teacher of aviation education. It covers material in the five basic areas as follows:

1. Theory of Flight—Why the airplane flies.
2. Flight Techniques—How the airplane is flown.
3. Meteorology—The problem of weather.
4. Navigation—How to get there.
5. Specialized training—Skilled trade for industry.

AVIATION EDUCATION CURRICULUM

Freshman Year				Sophomore Year			
Quarter				Quarter			
Name of Course	Hours	Credit		Name of Course	Hours	Credit	
English 101-2-3	3	3	3	English 211-12-13	3	3	3
Engr. Drawing 101-2-3	3	3	3	Engr. Drawing 211	3		
Aero Mechanics 101-2-3	3	3	3	Aero Mechanics 201-2-3	3	3	3
Math. 111, 112, 113	3	3	3	Sci. Ed. 121-2-3	4	4	4
Engr. Orientation 101	3			Social Studies 111-12-13	3	3	3
Air Science 151-2-3	1	1	1	Air Science 251-2-3	1	1	1
Aviation Educ. 111	3			Aviation Educ. 202-3	3	3	
Health 151		3		Phy. Educ. 20's to 50's	1	1	1
Art 133			3				
Phys. Educ. 11-12-13	1	1	1				
Men	20	17	17	Men	18	18	18
Women	19	16	16	Women	17	17	17

Junior Year				Senior Year			
Quarter				Quarter			
Name of Course	Hours	Credit		Name of Course	Hours	Credit	
Social Studies 114			3	Psychology 463			3
Psychology 242-243-312	3	3	3	Education 462	3		
Education 201-301-387	3	3	3	Shop Electives	3		3
Health 212		3		Electives Restricted to 300 and 400 level Courses	6	3	9
Mathematics 200	3			Aviation Educ. 471-450-403	3	3	3
Shop Electives	3	3	3	Aviation Educ. 472		9	
Aviation Educ. 321-22-23	3	3	3	Education 371	3		
Aviation Educ. 311-12	3	3		Philosophy 323		3	
	18	18	15		18	18	18

COURSES IN AVIATION EDUCATION

111. *Model Building.* (3) A course specifically designed for prospective teachers of aviation education. It deals with the structure and design for various model assembly. Six laboratory hours.

202. *Aircraft Familiarization.* (3) Designed to acquaint the student with the operation, parts and assembly and routine inspection of light aircraft.

203. *Implications of Aviation.* (3) Deals with the social, geographic, economic and political implications of the air age.

311. *Communications.* (3) The development of methods of communication, radio navigation, morse code, etc.

312. *Civil Air Regulations.* (3) Federal, State and local safety regulations with its application to aviation.

321. *Theory of Flight and Engines.* (3) The laws of nature as applied to aviation, also the principles, familiarization and operations of the internal combustion and jet engines.

322. *Aerial Navigation.* (3) The principles involved in scientifically going from one place to another by means of air travel. Practical experience is offered in this course.

323. *Elementary Flight.* (3) How to fly with actual flight experience and instruction. Ten clock hours of dual flight instruction. One lecture and two laboratory periods.

401. *Link Trainer Operation.* (3) The principles involved in the Link Trainer, its operation and maintenance.

402. *Advanced Flight.* (3) Supervised solo with dual flight instruction and experience. One lecture and two laboratory periods.

403. *Meteorology.* (3) General effects of weather phenomena. Special study of its relation to aviation.

412. *Aerodynamics.* (3) A general course dealing with the properties of air flow, air foil characteristics, wing theory, parasite drag, introduction of stability and control, and wind tunnel experiments.

413. *Aviation Education Workshop.* (3) Designed primarily for in-service teachers whose objectives are to enrich their curriculum by weaving air age materials into their specific subject area. Development of classroom procedures.

450. *Senior Project.* (3) Each senior is required to select and execute a project under the supervision of his major advisor. It may include the development of a complete course outline or research and compilation of a subject within the field of a student's interest.

471. *Materials and Methods for Aviation Education.* (3) A detailed study of selected teaching aids, effective methods of preparing and using patterns for blackboard drawings, charts, diagrams, posters, audio visual aids, design and construction of models, static and dynamic selected for use in specific teaching units.

472. *Directed Practice Teaching in Aviation Education.* (6) Observation of aviation education classes of all types. Preparation of lesson plans and directed teaching in at least three classes. Prerequisite: All required subjects in junior year of aviation education curriculum. Open only to majors in Aviation Education.

COURSES IN AERO MECHANICS

101. *Aircraft Basic Science.* (3) Covers those subjects which are generally regarded as essential for both aircraft mechanics and aircraft engine mechanics. This includes foundation in: theory of flight, airfoil design, blue print reading, aircraft materials and standards, internal combustion engine principles; and fundamentals of aircraft electrical and ignition systems. Six lecture and laboratory periods.

102. *Elementary Engines.* (3) Chemistry of combustion. Two and four stroke cycle engine design. Basic engine parts including their mechanical functions and requirements. Carburetion and fuel induction system design, magneto and ignition system design and operation; and engine firing orders and ignition timing. Heat transfer, cooling and lubrication. Six lecture and laboratory periods.

103. *Elementary Aircraft.* (3) Aircraft structural designs and requirements. Welded steel tube, aluminum alloy and wood fuselage and wing structures; dope and fabric covering. Aircraft system design and requirements. Fuel, oil, and hydraulic system control mechanism design. Fabrication procedures for metal and composite structures. Six lecture and laboratory periods.

201. *Advanced Engines.* (3) Disassembling, cleaning and visual inspection procedure. Maintenance and inspection requirements of ignition and fuel induction systems. Maintenance technique for valve and actuating mechanism. Inspection, installation and tracking of fixed pitch wood propellers. Power calculations. Engine run-up operation and preflight checks. Prerequisites: 101-2. Six lecture and laboratory periods.

202. *Advanced Aircraft.* (3) Classification of repairs and alterations. Practical application of aircraft welding. Repair methods for tubular steel, fabricated sheet metal and wood structures. Requirements of aircraft dopes, protective coatings and refinishing materials. Spral painting. Fabrication of transparent plastic materials. Prerequisites: 101 and 103. Six lecture and laboratory periods.

203. *Engine Overhaul.* (3) Engine removal and handling safety precautions. Dimensional inspection of engine parts, magnetic particle inspection of steel parts, fluorescent penetrant and x-ray inspection of non-ferrous metal parts.

Cylinder and crankcase assembly overhaul; accessory section overhaul. Sub-assembly, final assembly and final inspection. Installation of engine in aircraft, starting procedures; run-up and preflight check. Prerequisite: 201. Six lecture and laboratory periods.

301. *Airframe overhaul.* (3) Aircraft disassembly, repairs, alterations, re-covering and refinishing. Aircraft system inspection, repair, and modification. Civil Air Regulations concerning aircraft repair, alteration and modification. Compliance of airworthiness directives. Making and reading drawings of repairs, alterations and modifications. Finding center of gravity location by weighing aircraft and by comparison methods. Inspection and overhaul of aircraft electrical systems, control surfaces, and control mechanisms, methods of splicing control cables, wood spars, and cap strips. Airplane assembly and final inspection for flight test. Prerequisite: 202. Six lecture and laboratory periods.

302. *Aircraft Engine Accessory Overhaul.* (3) Inspection and overhaul of float type carburetors, magnetos, battery ignition distributors. Starting motors, generators, voltage-current regulators, vacuum pumps and fuel, oil, and hydraulic pumps. Service adjustment requirements of pressure injection type carburetors. Servicing lead acid type aircraft batteries and auxiliary power units. Operation of machine tools and test equipment required in the overhauling of aircraft engine accessories. Installation and final inspection of accessories. Civil Air Regulations concerning accessory airworthiness. Prerequisite: 101. Six lecture and laboratory periods.

303. *Propeller Fundamentals and Thrust Conversion.* (3) Inspection servicing and making minor repairs of fixed pitch metal propellers, two position propellers, McCauley controllable and constant speed propellers, Hartzelle and Beech controllable pitch propellers, Aero products Aeromatic propellers, Hamilton standard hydromatic propellers and Curtis electric propellers. Civil Air Regulations concerning repairs and overhaul of aircraft propellers. Overhaul and maintenance of propellers governors and control devices. Principles of Jet Propulsion and Gas Turbine Engines. Prerequisite 101-2. Six lecture and laboratory periods.

401. *Airframe Maintenance.* (3) Repair and maintenance of fabric covered composite, tubular steel and sheet metal structures. Servicing and replacement of tires, wheels and brakes. Repairs and adjustments of aircraft electrical system and control units. Maintenance of landing gear mechanism, hydraulic system and essential units. Trouble shooting on live aircraft malfunction conditions. Repair and maintenance of control columns and control mechanism. Conducting 100-hour inspections and complying airworthiness directives. Civil Air Regulations concerning airframe repairs. Prerequisite: 301. Six lecture and laboratory periods.

402. *Power Plant Maintenance.* (3) General engine maintenance, malfunction problems on live engines. Repair and maintenance of carburetors, ignition systems, spark plugs, magnetos and battery ignition distributors, valve and valve operating mechanisms, cylinder assemblies, baffles; cowling and cooling systems. Engine mount structure and dynamic suspension maintenance and repairs. Adjusting fuel, oil and vacuum pressure regulators. Oil pump and lubrication system repairs. Field servicing aircraft propellers. Prerequisite: 203. Six lecture and laboratory periods.

403. *Airport Operations.* (3) Airplane servicing and handling, fuel and lubricant requirements, routine maintenance airframe, routine maintenance power plants, pre-flight inspections and line checks, emergency repairs, C.A.R. pertaining to emergency maintenance, propeller installation and inspection. Safety devices and safety requirements, assembly and rigging, Placard and marking requirements. Angular measurements, weighing aircraft and center of gravity computation. Six lecture and laboratory periods. Prerequisite: Aero Mechanics 101-102-103.

COURSES IN ELECTRICITY

301. *Elements of Electricity.* (3) The elementary principles of direct and alternating current generation, distribution and utilization in light, power and communication. Practice in house wiring, calculating and determining the size

of service and circuits; wiring symbols, installation of electrical equipment and devices.

302. *Residential Wiring.* (3) Practice in house wiring; calculating and determining the size of service and circuits; wiring symbols; methods and procedures of wiring; installation of electrical equipment and devices. Prerequisite: 101. Six lecture and laboratory periods.

303. *Residential Wiring.* (3) This course is a continuation of 302. Six lecture and laboratory periods.

401. *Generator and Motor Rewinding and Repairing.* (3) Practice in trouble-shooting, repairing and rewinding and alternating current machinery. Prerequisites: 101. Six lectures and laboratory periods.

402. *Industrial Wiring.* (3) Designing and installing wiring systems for small industrial and commercial buildings.

403. *Lighting, Estimating, National Electrical Code.* (6) Elementary lighting theory, fixture selection and maintenance, theory and operation of fluorescent lights. Estimating materials. Rules and regulations as prescribed by the current National Electric Code. Prerequisite: 102. Twelve lecture and laboratory periods.

COURSES IN MACHINE SHOP

101. *Fundamentals of Machine Shop.* (3) Fundamentals of shop mathematics, tool identification, proper methods and uses, tool classification, rules and scales. Six lecture and laboratory periods.

102. *Lathe Turning.* (3) Tree lathe nomenclature, chucking micrometer reading, simple turning, roughing, polishing. Lathe set up gigs and fixtures. Six lecture and laboratory periods.

103. *Lathe Gearing.* (3) Lathe maintenance, collets, turning between centers, shoulder turning, taper turning, threading, kirling and lathe drilling. Six lecture and laboratory periods.

COURSES IN PRINTING

101. *Introductory Printing.* (3) Designed to acquaint the beginning student with the history of printing, type of classification, hand composition, proofing and proof-reading, make-up and composition and lock-up of simple job forms. Six lecture and laboratory periods.

102. *Platen Presswork.* (3) Skills are developed in the care and maintenance, register, make-ready and feeding of the platen presses. Prerequisite: 101. Six lecture and laboratory periods.

103. *Advanced Typography.* (3) Emphasis on the development of skills in the make-up, composition of book forms, newspaper, pamphlets, brochures and broadsides. Six lecture and laboratory periods.

401. *Linotype Keyboard Operation.* (6) Emphasis on correct keyboard fingering and everyday maintenance of the machine. Prerequisite: 101. Twelve lecture and laboratory periods.

402. *Cylinder Presswork.* (6) Care, maintenance, make-ready, and operational skills developed. Prerequisite: 101. Twelve lecture and laboratory periods.

403. *Cutting, Folding, Stitching, Perforating, Cost Findings and Estimating.* (6) Standard sizes, weights and proper uses of cover, card, book and bond papers are studied; the development of skills in the operation of the power paper cutter, folding machines, stitcher and perforator. Also copy fitting and estimating of the cost of production of all types of printed matter are studied. Prerequisite: 101. Twelve lecture and laboratory periods.

COURSES IN ELECTRONICS

101. *Electricity.* (3) Exploratory course intended to familiarize the student with basic principles of electricity and their practical applications. To develop skills in using tools in simple electrical construction.

102. *Electronics*. (3) This course emphasizes the part electricity and electronics play in our everyday lives. It encourages students to acquire safe work habits and develop skills in using tools and instruments while constructing projects which demonstrate basic electronic laws and principles.

103. *Radio Fundamentals*. (3) Radio and electronics fundamentals. Foundation in radio theory and practice. Six lecture and laboratory periods.

401. *Television Theory and Practice*. (6) Design and operation of T. V. receivers. Prerequisite: 101. Twelve lecture and laboratory periods.

402. *Television Servicing*. (6) Repair, testing and alignment of T. V. receivers. Prerequisite: 401. Twelve lecture and laboratory periods.

403. *Radio Transmitters and Communications Procedure*. (6) Transmitter design and operation; F.C.C. laws and procedures. Prerequisite: 401. Twelve lecture and laboratory periods.

GENERAL METAL

101. *Metal Working—Hand Operations*. (3) Instructional Units that lay a foundation for advanced metal working. Safety in Shop, hand tools, bench work operations; drilling, cutting, bending, forming, forging, heat treatment and precision measuring instruments; making and reading working drawings. Planning, designing and making projects and subject matter as taught on the Junior and Senior High levels.

102. *Sheetmetal Working*. (3) Introduction to Sheet Metal working. Developing patterns, laying-out, cutting, bending, forming, making seams, wiring edges, turning a burr, crimping, riveting, spot welding and soldering sheet metal. Planning and making projects, and developing subject matter as taught on the Junior and Senior High levels.

103. *Art Metal*. (3) Introduction to Art and Jewelry working. Tapping, chasing, and designing, shaping metal foil; sinking and beating down a tray, raising a bowl, decorating the surface or edge, etching design, doing wire work, hand soldering a joint, polishing, coloring, and preserving, metal spinning. Planning, designing and making projects, and developing subject matter as taught on the junior and senior high levels.

COURSES IN WOODWORKING

101. *Fundamentals of Carpentry*. (3) Modern tools and portable machinery materials and their uses. Carpentry specifications, modern house construction. Six lecture and laboratory periods.

102. *Foundation Construction*. (3) Beginning construction work. Staking and laying out foundation walls. Forms for footings. Forms for foundation walls, methods used in building forms. Prerequisite: 101. Six lecture and laboratory periods.

103. *Walls and Floor Framing*. (3) Types of wall framing, sill construction, girders and beams, joints, budging subflooring, outside walls, partition wall, framing, rough openings, second floor joists, and wall sheathing. Prerequisite: 101. Six lecture and laboratory periods.

111. *Hand Woodworking*. (3) A study of the proper use and care of common hand woodworking tools by the construction of simple projects that involve their uses. Six lecture and laboratory periods.

112. *Machine Woodworking*. (3) Emphasis is placed upon the proper maintenance and operation of such power woodworking machines as circular saws, shapers, morticers, band-saws, surfacers and jointers. Simple projects are constructed that involve the uses of these machines. Six lecture and laboratory periods.

113. *Machine Woodworking*. (3) Continuation of 112. Emphasis on jigs and maintenance of machines.

401. *Roof Framing*. (6) Styles of roof, gable roof, hip roof, gambrel roof. Principles of roof framing. The ridge common rafter. Hip rafter, layout of overhang and tail cut, valley rafter, jack rafter, dormer roof. Prerequisite: 101. Six lecture and laboratory periods.

402. *Exterior Finish*. (3) Covering for roof and wall, simple open and box cornice, gable trim, placing door and window frames, water table, corner boards. Porch cornice, bay window trim and exterior wall covering. Prerequisite: 401. Six lecture and laboratory periods.

403. *Interior Finish and Millwork*. (3) Interior wall covering, interior trim, types of casings and base laying, finished floor fitting and hanging doors. Mortise locks, stair construction, installing cabinets, built-in kitchen units and interior molding. Prerequisite: 402. Six lecture and laboratory periods.

DIVISION OF AGRICULTURAL AND HOME ECONOMICS EXTENSION SERVICES

Purpose

The Division of Agricultural and Home Economics Extension Services is an administrative unit of Tennessee Agricultural and Industrial State University organized for the purpose of providing useful services to those citizens of the State who find it impossible to avail themselves of the services offered on the University campus, or find it more expedient to work with specific groups on special farm and home problems on local, community, or State levels.

Scope of Services

Provisions are made to meet the specific needs of special interest groups in agricultural and home economics farm and home workshops, conferences, lecture demonstrations, and institutes. Arrangements may be made for these services through the Director of Agricultural and Home Economics Extension Services. The Division will work with agencies in several rural communities over the State in planning programs for general improvement in five major areas which include: (1) Agriculture, (2) Home Economics, (3) General Education, (4) Organization, and (5) Civic enterprises.

The Division offers services of its resource consultants who are specialists in Agricultural Education, Poultry Husbandry, Swine Husbandry, Beef Cattle, Farm Mechanics, Ornamental Horticulture, Agricultural Economics Dairy Husbandry, Plant Science Home Furnishings, Foods and Nutrition, and Veterinary Medicine.

The method employed in using consultant services is determined by the needs of the local community. These services are offered on individual, group, organizational, and community bases.

The Division sponsors a Farm and Home Institute in August of each year, for the purpose of disseminating information to farmers and farm wives from local communities of Tennessee.

Notes

DEPARTMENT OF AIR SCIENCE

HOWARD L. BAUGH

Lieutenant Colonel, U. S. Air Force

Professor of Air Science

Faculty:

Officers:

Major James M. Conley, Captain Arthur L. Fox, Captain Albert J. Price,
Captain James O. Hill, and Captain Robert T. Dickerson.

Non-Commissioned Officers:

Technical Sergeant Frank E. Hornsby, Jr., Technical Sergeant James A.
Lawrence, Staff Sergeant Howard F. Manley, Airman First Class Floyd
H. Stallins, and Staff Sergeant Sol C. Lowman.

Courses Available

Undergraduate courses only are offered for credit in extension. Courses will be organized to meet specific needs provided such courses are described in the latest edition of the regular University catalog. Only courses offered during the fall, winter and spring quarters at the University will be offered through extension during these respective quarters.

OTHER EXTENSION SERVICES

In addition to courses found in the University catalog, provisions are made to meet the specific needs of special interest groups in workshops, lectures, demonstrations, conferences and institutes. These non-credit courses are available for special interest groups such as farmers, homemakers, insurance salesmen and executives, parent-teacher associations and veterans. Arrangement for these services may be made through the Director of Field Services and Extension, Tennessee A. and I. State University, Nashville, Tennessee.

Community groups may secure individuals or groups from the College for leaders for informal discussions, panels or forums; or lectures on topic related to school or community problems.

WHO MAY ENROLL

Requirements for admission to extension courses are same as those for residence courses. Additional information regarding enrollment in extension courses may be secured by writing to the Director of Field Services and Extension, Tennessee A. and I. State University.

ORGANIZATION OF EXTENSION COURSES

Undergraduate extension courses, where offered for college credit, parallel similar courses offered in resident instruction and are taught by members of the university extension faculty. A three-hour credit course is divided into at least twelve assignments. The time necessary for preparation of a satisfactory report by a student on any assignment should be six hours. Each assignment requires certain reading in specific textbooks and the reflection necessary for proper organization of the material read and its application to the principles that are expected to be developed. The student is required to write his conclusions (in clear English) in the form of a report on each assignment, which is to be returned to the instructor for criticism and correction. Supplementary reading and reports may be demanded of the student on any assignment, when, in the judgment of the Committee on Extension, they are necessary. University entrance courses and vocational subjects are taught in much the same manner as collegiate courses.

ADMISSION AND REGISTRATION

No entrance examination is required for admission to the extension courses, but the right is reserved to reject any applicant who does not furnish complete or satisfactory data upon the official application form furnished him. Application for entry may be made at any time but courses will not be organized until the following procedures are expedited.

1. The prospective student should read carefully the announcements of the courses offered before selecting the one he or she wishes to pursue, and should choose the ones he or she is prepared to pursue with profit. Students desiring college credit must state this fact in advance, and comply with the requirements indicated in the latest edition of the catalog.
2. Having made the course selection, the applicant should fill in the application blank supplying all the data requested thereon and submit with the fee of \$5.00 per credit hour to the Director of the extension center located in his area.

3. When the local supervisor receives a minimum of fifteen applications or the equivalent in registration fees for each course desired, he will file an application with the Director of Field Services, and Extension, Tennessee A. and I. State University, along with the fee of \$5.00 per credit hour for each prospective member of the proposed class.
4. Upon receipt of course application from the local office, the Director of University Extension will submit the application to the University Extension Committee for approval. (The fee for extension courses is \$5.00 per credit hour, or \$15.00 per three credit hours. All registration fees must be paid on or before the date of registration.)
5. The supervisor or persons designated by the Committee on University Extension Service will contact the local official for the purpose of registering applicants and organizing the course or courses.
6. Refunds of registration fees will be made only to persons who withdraw before the first class meeting, providing the refund is requested within thirty days after the date of registration. The applicant requesting the refund shall send a written statement including the official receipt number and a statement by the instructor of the class and/or the director of the center to: Mr. Paul King, Bursar, Tennessee A. and I. State University, Nashville, Tennessee.

INSTRUCTIONAL STAFF

The University Extension Committee is desirous of securing the best qualified personnel to teach extension courses. Instructors employed on the Extension Staff must meet the same qualifications as instructors in comparable fields employed to teach courses in residence. Persons desiring to teach in Extension should make application to the University Extension Committee. These applications are reviewed by the Committee and approved by the respective heads of the departments of the fields in which the applicants plan to teach, and by the Administration of the University.

GENERAL CREDIT

University credit or university entrance credit, as the case may be, will be given for completion of the courses in Group I, when requirements of the instructor concerned have been met and examinations have been passed and officially approved by the head of the department through which the course is offered. Students who enroll for degree credit, however, must meet the entrance requirements of the University.

Extension credits earned in other institutions will be accepted only if these have been earned in an institution which is a member of the Teachers College Extension Association or the University Extension Association. In no case will credits be accepted in excess of the maximum totals allowed for extension work as set forth in the above paragraphs regarding credits, and/or grades earned indicate that the student has not profited from course or courses pursued.

Undergraduate credit—Not more than 48 credit hours in Extension courses will be accepted towards the Bachelor Degree. Of the total credits approved for certification, not more than six hours of such credit will be allowed for renewal of certificates. Courses numbered 300 (Junior) and (400 Senior) earned through extension will not be accepted as meeting certification requirements for the elementary certificates granted on the two year college level.

VETERANS

Veterans of World War II and Korea may enroll in any of these courses under provisions set forth by the G. I. Bill and Education Bill which may be obtained from Veterans' Administration offices before registering for any course.

GRADES

Awarding of grades in Extension Classes follow the same procedure as listed in the University Bulletin. This also applies to "Incomplete Grades".

AIR FORCE RESERVE OFFICERS' TRAINING CORPS

Mission

The mission of the Air Force ROTC is:

To develop in selected college students, through a permanent program of instruction at designated civilian educational institutions, those qualities of leadership and other attributes essential to their progressive advancement to positions of increasing responsibility as commissioned officers in the United States Air Force.

To plan, direct, supervise, and provide for the instructional and administrative needs of the Air Force Reserve Officers' Training Corps in accordance with policies approved by Headquarters Air University and Headquarters United States Air Force.

Purpose and Objectives

The purpose and objectives of the Air Force ROTC program are:

To select and motivate cadets to serve as career Air Force officers in fields specifically required by the United States Air Force.

To develop in cadets by precept, example and participation, the attributes of character, personality and attitudes essential for leadership.

To develop in cadets an interest in, and understanding of, the Air Force mission, organization, operations, problems, and techniques.

To provide that military education and training which will give cadets a general background and sound foundation on which to build an officer career.

Statutory Requirements

In order to meet the legal requirements for enrollment in Air Force ROTC, a student must be a citizen of the United States, not less than 14 years of age, and physically qualified for military service (or will be so on arrival at military age).

Character Requirements

A good moral character is a prerequisite for enrollment and continuance in the AFROTC. A student who has been convicted by a court-martial or by a civil court for any offense other than a minor traffic violation will not be enrolled initially or continued in the Advanced Course unless such offense is waived by competent authority.

Persons eliminated from a service academy or from any officer training program of the Army, Navy, or Air Force for military inaptitude, indifference, or undesirable traits of character will not be formally enrolled or permitted to wear the AFROTC uniform.

Persons eliminated for disciplinary reasons from a service academy or from one of the officer training programs of the Army, Navy, or Air Force will neither be certified for Selective Service deferment as basic students nor formally enrolled in the Advanced Course, unless a waiver is granted by competent authority.

Loyalty Requirements

Each student will be required to execute the following certificate:

"I do solemnly swear (or affirm) that I will support and defend the Constitution of the United States against all enemies, foreign or domestic; that I will bear true faith and allegiance to the same; and that I take this obligation freely, without any mental reservation or purpose of evasion; so help me God."

This certificate will be placed in each student's record file after execution. A student who does not execute this certificate will not be enrolled in the basic course.

Age Requirements

A student will not be enrolled initially or be allowed to re-enroll in the advanced course after a period of non-participation in the Air Force ROTC training, if his age is such that he will be unable to complete all requirements

for appointment as a Reserve Officer of the Air Force prior to reaching age 26 years, 6 months, if programmed for flying training, or age 28 years, if programmed for other than flying training.

Institutional Requirement (Enrollment in the Basic Course)

In keeping with the provisions of the Morrill (Land Grant) Act, Tennessee A&I State University requires as a prerequisite for graduation that all physically qualified male students enroll in the Air Force ROTC until they complete the two-year basic course, provided they meet all other requirements as outlined above. The determination of who may be excused from the institutional military training requirement on the basis of previous military training or service, or for other reasons, is the prerogative of the institutional authorities.

Enrollment in the Advanced Course

There are five categories of advanced course students; however, only four of these (Category I, II, III, and IV) are open to applicants for their initial enrollment. As many qualified students may be enrolled in the appropriate category as are necessary to fulfill, but not exceed, quotas set by Headquarters United States Air Force. A student enrolled in Category I, II, or III and commissioned from it upon graduation from the Air Force ROTC program will be required to serve an initial active duty period according to the terms of his category agreement. The requirements for each category are listed below:

I. Category I—Cadets who qualify for flying training: For reporting purposes, there are two subcategories, Category I-P for pilot candidates, and Category I-N for navigator candidates.

A. Category I-P—A cadet may be considered basically qualified for Advanced Course enrollment who:

1. Has achieved a Pilot Aptitude stanine of "4" or higher and an Officer Quality stanine of "3" or higher on the Air Force Qualification Test (AFOQT).
2. Is medically qualified Class I in accordance with current Air Force Directives.
3. Agrees to accept the active duty obligation required of pilot trainees.
4. Will not exceed 26½ years of age at the time of appointment (must enter flight training before reaching 27th birthday).
5. In the opinion of the PAS, is acceptable on the basis of his standing in the institution and in the Air Force ROTC.

B. Category I-N—A cadet may be considered basically qualified for Advanced Course enrollment who:

1. Has achieved a Navigator Technical stanine of "4" or higher and an Officer Quality stanine of "3" or higher on the Air Force Officers Qualification Test (AFOQT).
2. Is medically qualified Class I or IA in accordance with current Air Force Directives.
3. Agrees to accept the active duty obligation required of navigator trainees.
4. Will not exceed 26½ years of age at the time of appointment (must enter flight training before reaching 27th birthday).
5. In the opinion of the PAS, is acceptable on the basis of his standing in the institution and in Air Force ROTC.

II. Category II—Cadets enrolled in college programs leading to a baccalaureate degree, with majors in prescribed engineering and scientific fields of study, or who may qualify for basic meteorology training. A cadet may be considered basically qualified for Advanced Course enrollment who:

- A. Has achieved an Officer Quality stanine of "3" or higher on the Air Force Officers Qualification Test (AFOQT).
- B. Is medically qualified for commissioning in accordance with current Air Force Directives.

C. Agrees to serve on active duty for a minimum of four years, unless sooner relieved by proper authority.

D. Will not exceed 28 years of age at the time of appointment.

E. In the opinion of the PAS, is acceptable on the basis of his standing in the institution and in Air Force ROTC.

F. Will be academically qualified by completing one of the following requirements:

1. Qualify for Basic Meteorology training.
2. Pursuing a baccalaureate degree in:

Meteorology
Aeronautical Engineering
Electrical Engineering
Mechanical Engineering
Civil Engineering

3. Completing an Academic Major in:

Mathematics
Electronic Data Processing
Physics
Sanitary Engineering
Industrial Engineering
Other Scientific or Technical Fields of Study

III. Category III—Cadets enrolled in college programs leading to a baccalaureate degree, generally with majors in other than engineering and scientific fields of study. A cadet may be considered basically qualified for Advanced Course enrollment who:

A. Has achieved an Officer Quality stanine of "3" or higher on the Air Force Officer Qualification Test (AFOQT).

B. Is medically qualified for commissioning in accordance with current Air Force Directives.

C. Agrees to serve on active duty for a minimum of four years, unless sooner relieved by proper authority.

D. Will not exceed 28 years of age at the time of appointment.

E. Will be academically qualified by completing one of the following:

1. Pursuing a baccalaureate degree in:

Business Administration
Public Administration

2. Pursuing a Degree or Academic Major in:

International Relations
Political Science
Public Relations
Education
Psychology
Any Major or Degree
Requirements for Chaplain Training

IV. Category IV—Cadets who have fulfilled their active military service requirement for selective service purposes. A cadet may be considered basically qualified for Advanced Course enrollment who:

A. Has fulfilled active military service requirements for selective service purposes through service other than six months active duty for training as provided in the Reserve Forces Act of 1955 (P.L. 305).

B. Has achieved an Officer Quality stanine of "3" or higher on the Air Force Qualification Test (AFOQT).

C. Is medically qualified for commissioning in accordance with current Air Force Directives.

D. Will not exceed 28 years of age at the time of appointment.

E. In the opinion of the PAS, is acceptable on the basis of his standing in the institution and in Air Force ROTC.

NOTE: A cadet qualified for Category IV enrollment may be enrolled in Category I-P, I-N, II or III provided he meets the categorical qualifications prescribed above.

V. Category V—This category is not open to advanced course applicants for their initial enrollment. It has been established as an additional category for enrolling Category I-P and I-N cadets who fail to remain medically qualified; certain Category I-P cadets who become disqualified as a result of Flight Instruction Program participation; and other groups as designated in special circumstances by Headquarters USAF. Transfer from Category I-P or I-N to Category V will be authorized only when a cadet cannot be accommodated in another category because of quota limitations. The following additional conditions must exist before a cadet can be transferred from Category I (I-P and I-N) to Category V:

A. The cadet must be medically and otherwise qualified for non-rated duty.

B. All production quota vacancies for which the individual is qualified must be filled. If quotas are not filled, the individual will be voluntarily transferred to the existing vacancy. Individuals not agreeable to such transfers will be disenrolled from Air Force ROTC.

C. Enrollments in Category V must be voluntary.

Credit for Previous Military Training

An AFROTC cadet who transfers to another institution at which an AFROTC unit is also maintained will be given credit for that part of the AFROTC course which he successfully completed at the losing institution, as evidenced by the AFROTC official record.

On the basis of previous honorable active service (other than six-month active duty for training) in the Air Force, Army, Navy, Marine Corps, or Coast Guard, a cadet may request a waiver of the basic course or any portion thereof, required for entrance into the advanced course. The Professor of Air Science may then waive so much of the basic course as he considers equivalent to the active service training. Each veteran entering this institution at the freshman or sophomore level who desires a commission through Air Force ROTC is encouraged to take in phase with non-veteran contemporaries the remaining portion of the basic program.

The Professor of Air Science may waive on a year-for-year basis so much of the Air Force ROTC program as he considers equivalent to the previous training at the United States Air Force Academy, United States Military Academy, United States Naval Academy, United States Coast Guard Academy, or in the Senior Division of the Army ROTC or Naval ROTC, for students eligible and accepted for enrollment. However, under no circumstances will the requirements for successful completion of the summer training phase of the Air Force ROTC program be waived.

Deferment Policy

The Air Force ROTC deferment procedure is designed solely to enable selected cadets of the Air Force ROTC to qualify for appointment as commissioned officers of a component of the Air Force through uninterrupted completion of academic and military courses. The Air Force will not select for deferment a cadet who cannot ultimately qualify for a commission through enrollment and training afforded by the Air Force ROTC or who evidences lack of desire to become an officer of the Air Force.

a. To qualify for continued deferment, cadets must satisfy all Air Force ROTC standards, including the following:

- (1) They must remain in good standing in military courses (2.00 average).
- (2) They must remain in good standing in academic courses (2.00 average).

(3) Their attendance must be continuous, except for the following periods of authorized absence:

Regularly scheduled vacation periods;

Periods of sick leave authorized by the Professor of Air Science;

Periods of leave from the military course of instruction that are authorized by the Commandant, Air Force ROTC;

Periods of regularly scheduled on-the-job training under a cooperative plan;

Periods after completion of the Air Force ROTC program and before completing the academic course, when authorized by the Commandant, Air Force ROTC.

(4) They must graduate within twelve months after completing Air Science IV (Including AFROTC summer training).

Obligations of Deferred Cadets

To be deferred from induction, those selected for enrollment continuance in the Air Force ROTC program must sign a Deferment Agreement, which states in part: I . . . hereby agree to complete the basic course, if enrolled therein, to enroll in and complete the advanced course at the proper time, if accepted therefore; upon completion of termination of the course of instruction therein, to accept a commission, if tendered; to serve on active duty in the Air Force for a period of not less than two years after receipt of such commission, subject to call by the Secretary of the Air Force; and to remain a member of a Regular or Reserve component of the Air Force until the sixth (6th) anniversary of the receipt of my commission; or, if the Air Force does not require my service on active duty for two years in fulfillment of my obligation, to serve on active duty for training with the Air Force for a period of six months after receipt of my commission and thereafter to remain a member of an appropriate Reserve unit until the eighth (8th) anniversary of the receipt of my commission.

a. Registrants who are continued in a deferred status under Section 6, UMT&S Act (50 USC App 456 (b)) remain liable for training and service in the Armed Forces until their 35th birthday.

b. The deferment of an individual will be cancelled if he ceases to be a formally enrolled AFROTC cadet, or if he fails to remain in good standing in the academic courses and military courses (2.00).

Discharge from Basic Course

With the concurrence of the university authorities, the Professor of Air Science may discharge a basic cadet from the AFROTC. Such discharge relieves the university of its obligation to require the cadet concerned to complete the basic course as a prerequisite for graduation.

Discharge from Advanced Course

The Professor of Air Science may discharge a cadet from the advanced course. Each such discharge must receive the concurrence of the President of the University or his designated representative. A cadet will normally be discharged from the advanced course "without prejudice for the convenience of the Government." A cadet may be discharged for any of the following reasons:

1. A cadet who, for any reason, is unable to continue regular enrollment in the institution, will be discharged from the advanced course.
2. A cadet who becomes medically disqualified for continuance will be discharged from the advanced course.
3. A cadet who falls below acceptable retention standards will be discharged from the advanced course.
4. A cadet who requests release from his advanced course agreement for reasons considered justifiable may be discharged from the advanced course.
5. A cadet may be discharged because of inaptitude, indifference to training, incompatibility, evading the terms of his advanced course agreement, for disciplinary reasons, or for reasons involving undesirable traits of character.

6. A cadet eliminated from the Air Force ROTC Flight Instruction Program may be discharged from the advanced course.

Discharged with Prejudice

A cadet whose conduct is or has been such as to bring dishonor on the corps and upon himself may be discharged "with prejudice" subject to approval of the head of the university and the Commandant, AFROTC. A cadet discharged "with prejudice" is not eligible for enrollment in an Air Force officer procurement program or for appointment in any component of the Air Force.

Summary of the Air Force ROTC Curriculum

The AFROTC course of study is divided into the basic course covering the first two years, the advanced course covering the Junior and Senior years, and Summer Training. The course of study consists of instruction totaling 390 class hours; allocated as follows: Freshman and Sophomore years, 90 hours; Junior and Senior years, 150 hours each; and Summer Training (normally attended between the Junior and Senior years) four weeks.

The basic course, Foundations of Air Power, is an introduction to the nature of aviation and its influence on modern man, and is designed, in part to interest the cadet in continuing in AFROTC, and ultimately, in making the Air Force his career.

The advanced course builds on this background and provides instruction designed to further develop the cadet's officer potential. This is accomplished through attention to his personal skills (e.g. his ability to communicate, to think clearly, and to deal with people), and through expansion of his knowledge and understanding of global concepts and Air Force Operational principles.

Throughout the AFROTC course of study, the cadet is provided with a general education complementary to the academic program of the university. While this is specifically intended to serve the student as an Air Force officer, much of it will be useful to him in civilian occupations.

In addition to the formal course of study, the curriculum includes: Experiences designed to stimulate and develop a growing interest in the Air Force flight training program; e.g. orientation flights and visits to Air Force bases; opportunities for the cadet to apply principles of leadership, management, and staff work in actual working situations; and other experiences (social activities, intramural competition, inter-detachment competition, and guidance sessions) designed to assist in the development of officer qualities.

DETAILED COURSE OUTLINE

Air Science I

Foundations of Air Power—I

- A. S. 151 A. Accept a two or three quarter hour college course which contributes to the professional education of an Air Force officer.
B. Leadership Laboratory: 1 hour per week.....10 hours
- A. S. 152 A. Accept a two or three quarter hour college course which contributes to the professional education of an Air Force officer.
B. Leadership Laboratory: 1 hour per week.....10 hours
Foundations of Air Power—(30 hours)
- A. S. 153 A. Elements and Potentials of Air Power..... 8 hours
B. Air Vehicles and Principles of Flight.....12 hours
C. Leadership Laboratory: 1 hour per week.....10 hours

NOTE: Administration of evaluation instruments, the AFROTC Comprehensive Examination and the AFROTC Attitude Questionnaire, will be accomplished as directed by Headquarters Air Force ROTC between 15 April and 15 May annually, and is in addition to the above requirements.

Air Science II

Foundations of Air Power—II

- A. S. 251 Foundations of Air Power II—(30 hours)
A. Military Instrument of National Security..... 6 hours
B. Professional Opportunities in the USAF..... 4 hours
C. Evolution of Aerial Warfare.....10 hours
D. Leadership Laboratory: 1 hour per week.....10 hours
- A. S. 252 Foundations of Air Power II—(30 hours)
A. Elements of Aerial Warfare..... 8 hours
B. Employment of Air Forces..... 3 hours
C. Space Operations..... 9 hours
D. Leadership Laboratory: 1 hour per week.....10 hours
- A. S. 253 A. Accept a two or three quarter hour college course which contributes to the professional education of an Air Force officer.
B. Leadership Laboratory: 1 hour per week.....10 hours

NOTE: Administration of evaluation instruments, the AFROTC Comprehensive Examination and the AFROTC Attitude Questionnaire, will be accomplished as directed by Headquarters Air Force ROTC between 15 April and 15 May annually, and is in addition to the above requirements.

Air Science III

Air Force Officer Development

(Four hours class, one hour laboratory per week)

- A. S. 351 Air Force Officer Development (50 hours)
A. Air Force Commander, His Staff and the Air Base....10 hours
B. Communicating and Instructing in the Air Force....30 hours
C. Leadership Laboratory.....10 hours
- A. S. 352 Air Force Officer Development (50 hours)
A. Creative Problem Solving.....20 hours
B. Leadership Seminar.....20 hours
C. Leadership Laboratory.....10 hours
- A. S. 353 Air Force Officer Development (50 hours)
A. Leadership Seminar.....20 hours
B. Military Justice System.....15 hours
C. Preparation for Summer Training..... 5 hours
D. Leadership Laboratory10 hours

NOTE: Administration of evaluation instruments, the AFROTC Comprehensive Examination and the AFROTC Attitude Questionnaire, will be accomplished as directed by Headquarters Air Force ROTC between 15 April and 15 May annually, and is in addition to the above requirements.

Air Science IV

Leadership and Air Power Concepts

(Four hours class, one hour laboratory per week)

- A. S. 451 Leadership and Air Power Concepts (50 hours)
A. Air Science IV Cadets will enroll in the University course:
International Relations—341.....30 hours
B. Leadership Seminar.....10 hours
C. Leadership Laboratory.....10 hours
- A. S. 452 Leadership and Air Power Concepts (50 hours)
A. Weather and Navigation.....30 hours
B. The Air Force Officer.....10 hours
C. Leadership Laboratory.....10 hours

- A. S. 453 Leadership and Air Power Concepts (50 hours)
 A. Air Science IV Cadets will enroll in the university course:
 Political Geography—391.....30 hours
 B. PAS Time (Career Guidance and Moral Responsibilities)
 to be used throughout the year as needed.....10 hours
 C. Leadership Laboratory.....10 hours

NOTE: Administration of evaluation instruments, the AFROTC Comprehensive Examination and the AFROTC Attitude Questionnaire, will be accomplished as directed by Headquarters Air Force ROTC between 15 April and 15 May annually, and is in addition to the above requirements.

COURSES TO BE SUBSTITUTED FOR BASIC AIR SCIENCE

CHEMISTRY:

Bio-Chemistry
 General Chemistry
 Organic Chemistry
 Analytical Chemistry
 Physical Chemistry

BIOLOGY:

Botany
 Bacteriology
 Physiology
 Intro to Biology
 Genetics
 Anatomy
 Zoology
 Embryology
 Entomology

LANGUAGES: (Foreign)

French
 German
 Spanish

PHYSICS:

General Physics
 College Physics

SCIENCE:

Natural Science
 Geography
 Weather
 Geology

SOCIAL SCIENCES:

Economics
 History
 Psychology
 Sociology
 Social Studies
 Political Science
 Social Administration

HUMANITIES:

World Literature

ENGINEERING:

Architectural Engineering
 Civil Engineering
 Mechanical Engineering
 Electrical Engineering
 Industrial Engineering
 Aviation Education

MATHEMATICS:

Algebra
 Trigonometry
 Arithmetic
 Mathematics (General Courses)
 Geometry
 Calculus
 Theory of Equations
 Differential Equations

University Credit

Tennessee A&I State University grants the following credit for Air Science courses:

Air Science I	(A. S. 151, 152, 153).....	3 quarter hours per year
Air Science II	(A. S. 251, 252, 253).....	3 quarter hours per year
Air Science III	(A. S. 351, 352, 353).....	9 quarter hours per year
Air Science IV	(A. S. 451, 452, 453).....	9 quarter hours per year

NOTE: No credit is granted by the University for attending Summer Training or Flight Instruction.

NOTE: One quarter hour is granted for Leadership Laboratory for each of the following: A. S. 151, 152, and 253. AFROTC credit is granted, during the Air Science IV year, for International Relations 341 (3 hours) and Political Geography 391 (3 hours).

Air Force ROTC Emoluments

All students in the AFROTC are furnished texts and uniforms by Tennessee A&I State University. These students are required to deposit ten dollars with the Bursar of the University as surety against loss or damage of textbooks, uniforms or equipment.

At the end of the Spring Quarter, or at such time as the student officially withdraws from the University, the Ten Dollar (\$10) deposit is returned to the student provided he turns in all textual materials, uniforms and equipment in a serviceable conditions, except for "fair wear and tear."

In addition to being furnished texts, uniforms and other equipment, students enrolled in Advanced AFROTC are paid subsistence allowance at a daily rate prescribed for each fiscal year by the Secretary of the Air Force. The period of entitlement for advanced cadets will be between the first day of the full quarter and the date of graduation, approximately twenty one months later, minus the number of days in the authorized summer training unit pay period. The period of summer training is approximately twenty-eight days.

Sponsored Activities

The Department of Air Science sponsors the following activities:

a. The AFROTC Rifle Team. Cadets are selected to represent Tennessee A&I State University in small bore rifle competition with other colleges and universities. Members of this team receive an athletic letter award. Previous experiences in firearms are not required.

b. The AFROTC Drill Team. The "Tiger Jets" is the official name of the AFROTC Drill Team. This team is composed of approximately thirty-five outstanding cadets who possess desirable leadership potential. This team performs at athletic events, both home and away, at parades or ceremonies, and serves as honor guard or ushers for activities sponsored by the university.

c. The Arnold Air Society. This is a national AFROTC SOCIETY for outstanding cadets enrolled in AFROTC.

d. The AFROTC Society. This society is a social organization open to all enrolled cadets organized to promote the general welfare of the cadet, and to provide social functions and activities peculiar to the cadet corps. It publishes "The Rocket", a cadet newspaper. Dues are \$1.00 per cadet per quarter.

e. The AFROTC Glee Club. This is an organized choral group of approximately 35 cadets who sing at AFROTC programs on and off campus. They are trained by the University choir director.

f. The Air Police. Selected basic cadets who perform security duties.

g. AFROTC Band. Approximately 45 cadets who play music for drill, ceremonies and other occasions for the AFROTC, university, and community activities.

DESCRIPTION OF COURSES

Classroom instruction proceeds through four levels, of which the first two comprise the one year Basic Course and the last two year Advanced Course.

Air Science 1, *Foundations of Air Power*—1 (A. S. 153)

An introduction to the fundamentals of Air Power, to include elements of air power, and basic aeronautical science.

Air Science 2, *Foundations of Air Power*—2 (A. S. 251, 252)

A more advanced consideration of air power, and the development of aerial warfare, with emphasis on the basic concepts governing the employment of Air Forces and weapons systems.

Air Science 3, *Air Force Officer Development*. The Junior Year.

An introduction to the principles of leadership and the knowledge, understanding, attitudes, and skills that are basic to effective performance as an Air Force Officer.

Air Science 4, *Global Relations*. The Senior Year.

An intensive study of global relationships of special concern to the Air Force officer with emphasis on international relations, geography, weather and navigation.

Leadership Laboratory; also, proceeds through four levels, the first two levels are a part of the Basic Course. The final two levels are a part of the Advanced Course. This program is the part of the Air Force ROTC curricula.

ulum which provides the cadet with an opportunity to develop and to test certain areas of his leadership knowledge and skill in a supervised environment.

Summer Training Unit—The Air Force in Operation

(Four weeks between the Junior and Senior Years)

Junior officer training with emphasis on military discipline, aircrew and aircraft indoctrination, a career in the USAF, organization and functions of an Air Force base, physical training and weapons familiarization.

Cadet Outcomes: When the cadet has completed AFROTC summer training, he should:

1. Have acquired those leadership qualities and the *esprit de corps* which derive from working with others under conditions of military life.
2. Have an increased interest in flying training and be able to practice routine procedures associated with non-aircrew flying.
3. Understand the moral responsibility and obligations of an Air Force officer.
4. Be acquainted with the functions performed by the various organizations and key officers of the Air Force base.
5. Have acquired increased proficiency in leading and participating in military drills, parades, and ceremonies.
6. Be able to participate in a well-rounded athletic program.
7. Be able to care for and use his personal weapons properly.
8. Be more nearly qualified to be a junior officer in the Air Force.

FLIGHT INSTRUCTION PROGRAM

The objectives of the Flight Instruction Program are: to motivate qualified Air Force ROTC cadets to a career in the Air Force; to encourage qualified basic Air Force ROTC cadets to enroll in Category I of the Advanced Course as pilot training applicants; and to provide a screening device that will identify those pilot training applicants who lack the basic aptitudes for Air Force pilot training.

General Description

The FIP provides 36½ hours flying time—35 hours (15 hours solo and 20 hours dual) of flight instruction plus 1½ hours final flight progress check. The FIP also provides 35 hours of ground school, of which 30 hours are included in the Air Force ROTC Advanced Course curriculum. Each graduate of the FIP who successfully completes 35 hours of flight and ground instruction may be eligible to apply for an FAA Private Pilot's Certificate, but the acquisition of a certificate is not a requirement for successful completion of the FIP. The Flight Curriculum, as agreed upon by the Air Force and the FAA, is based upon Civil Aeronautics Manual 50 (Primary Flying School Curriculum) and the standards described therein are official for the FIP.

AGRICULTURAL AND HOME ECONOMICS EXTENSION

WALTER A. FLOWERS, Director

Extension Faculty:

Ozzie L. Adams, Christine Alexander, Arthur B. Davis, Walter A. Flowers, Henry C. Hardy, Neal McAlpin, Willie E. Officer, Marylouise E. Ritter, Homer R. Wheaton, and Eddie Williams.

INDEX

	PAGE
Absences	35
Accommodations	23
Accounting	190
Accreditation	4
Administrative Officers	9
Admission	
University	30
Graduate Program	44
Candidacy for Graduate Degree.....	50
Aero Mechanics	233
Agricultural Economics	93
Agricultural Engineering	93
Agriculture and Home Economics, School of.....	91
Agricultural Education	92
Animal Science	94
Plant Science	99
Home Economics	102
Agronomy	100
Air Science, Department of	241
Alumni Affairs	28
Animal Husbandry	95
Application for Admission.....	30
Art Education	186
Arts and Sciences, School of.....	112
Biology	118
Chemistry	122
English	125
Modern Foreign Languages.....	128
Physics and Mathematics	133
Science Education	139
Social Sciences	142
Speech and Drama	160
Aviation Education	231
Awards	27
Bachelor of Arts Program.....	40
Bachelor of Science Program.....	40
Biochemistry	96
Board of Education	8
Building Construction	229
Buildings, Major	19
Buildings and Equipment	19
Business, Division of	188
Cafeteria	24
Calendar, The Activities	3
Class Admission and Attendance.....	34
Classification	38
Clothing and Textiles	107
Communications Clinic	23
Conferring of Degrees	50

	PAGE
Contents, Table of	5
Counseling	22
Counselors, Activities	22
Courses and Credit Hour Limitations	33
DEPARTMENTS	
Administration, Curriculum and Instruction	57-169
Air Science	241
Agricultural Education	92
Animal Science	94
Architectural Engineering	215
Art and Music Education	180
Biology	118
Business Administration	188
Business Education	192
Chemistry	122
Civil Engineering	217
Electrical Engineering	220
English	125
Health and Physical Education	74
Home Economics	102
Industrial Education	226
Mechanical Engineering	223
Modern Foreign Languages	128-133
Physics and Mathematics	133
Plant Science	99
Psychology	207
Science Education	139
Social Sciences	142
Speech and Drama	160
Dormitories	19
Education, School of	167
Administration, Curriculum and Instruction	171
Art and Music Education	180
Business Administration	188
Business Education	192
Health and Physical Education	196
Psychology	207
Electricity	234
Elementary Education	58-171
Employment, Student	27
Engineering, School of	212
Architectural Engineering	215
Civil Engineering	217
Electrical Engineering	220
Mechanical Engineering	223
Industrial Education	226
Entrance Requirements	31
Examinations	37
Extension work	238
Failures	35
Faculty	9

	PAGE
Farm	19
Fees and Expenses	29
Field Services	239
Final Oral Examinations	53
Flight Training	231
Foods and Nutrition	108
Foreign Language Requirement	129
Freshman Requirements	22
Freshman Week	22
General Information	29-43
General Requirements	31
Geography	142
Grades	36
Grading System	35
Graduate and Professional Education for Tennessee Students	41
Graduate School, The	43
General Requirements	43
Application	44
Admission	44
Registration	47
Advisement	46
Foreign Language Requirement	80
Guidance	22
Handbook, Student	23
Health Education	196
Health Services	24
History	143
Home Economics, Department of	102
Home Economics Education	104
Honor Societies, National	27
Honors	27
Horticulture	101
Incomplete Grades	36
Information, General	29
Interfraternity Council	26
Languages	128
Library Service	178
Living Accommodations	23
Machine Shop	235
Music Education	180
Organizations, Student	24
Physical Education	196
Placement Bureau	28
Plant Science	99
Political Science	148
Poultry Husbandry	98
Pre-Dentistry	115
Pre-Medicine	115
Pre-Nursing	115
Printing	235
Probation	36

	PAGE
Psycho-Educational Clinic	23
Public Relations	28
Publications	24-25
Quality Credits	35
Quarter Hour Load	33
Radio	235
Recreation	24
Refund of Fees	29
Registration	
Regular	33
Late	33
Requirements, Admissions	31-44
Requirements, Bachelor Degrees	38
Requirements, Graduate Degrees	49
Requirements, Residence	50
Romance Languages	
German	132
French	131
Spanish	131
Room and Board	23
Scholarship Standards	36
Scholarships	27
Sheet Metal	236
Social Administration	152
Sociology	155
Special Education	177
State Board of Education	8
State Educational Services	8
Student Aid	28
Student Health Service	24
Student Organizations	24
Student Personnel Services	21
Student Publications	24
Student Teaching	176
Teachers, Elementary	176
Teaching, Student	176
Transcripts	31
For Admission	31
Fees for	30
University	
Historical Statement	18
Buildings and Equipment	19
Purposes	19
Veterans Information	41
Withdrawals	38
Wood Working	236

